1985

1985-1986 Southern Illinois University Bulletin Carbondale Campus (Undergraduate Catalog)

Southern Illinois University Carbondale

Southern Illinois University at Carbondale

Bulletin

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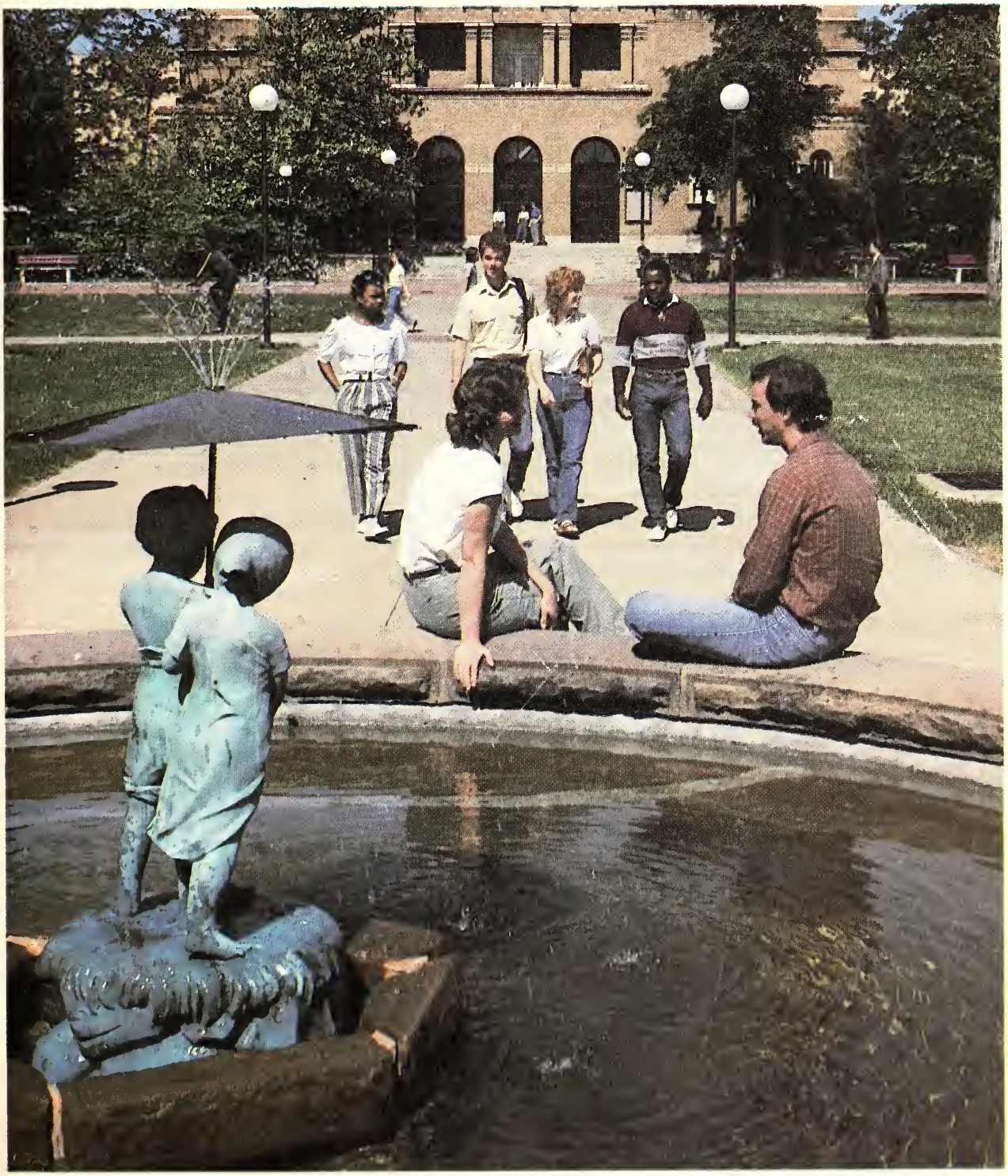

Quick Reference Index

Southern Illinois University at Carbondale is an Equal Opportunity/Affirmative Action institution in accordance with Civil Rights legislation and does not discriminate on the basis of race, religion, national origin, sex, age, handicap, or other factors prohibited by law in any of its educational programs, activities, admissions, or employment practices. Concerns regarding this policy should be referred to the Affirmative Action Office, Southern Illinois University at Carbondale, Anthony Hall, Room 104, telephone 536-6618.

This publication provides information about Southern Illinois University at Carbondale. Primary attention is given to its academic program, rules and regulations, and procedures. Students starting their collegiate training during the period of time covered by this catalog (summer 1985 through spring 1986) are subject to the curricular requirements as specified herein. Should these requirements subsequently be changed by the University, students are assured that necessary adjustments will be made so that no additional time is required of them, because of these changes in meeting their educational objectives. Where programs include requirements established by agencies external to the University, every effort will be made to follow this same principle so far as possible. Should subsequent curricular requirements changes work to the students' advantage, they may elect to meet the new requirements rather than those contained herein. This curricular requirement arrangement will extend for a seven calendar year period from date of entry for baccalaureate programs and three years for associate programs. If the students have not met their undergraduate educational objectives by that time, they will then become subject to current curricular requirements. Should the University find it necessary to discontinue an academic program, the effective date, unless otherwise dictated, will be such that the last regularly admitted class will be able to complete the program in regular time sequence. This means four years for baccalaureate and two years for associate programs. The University reserves the right to change information contained herein on matters other than curricular requirements without regard as to their date of entry into college.

Southern Illinois University at Carbondale

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Southern Illinois University at Carbondale Bulletin (USPS 506-080)

Volume 26, Number 5, October 1984

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This Catalog

The Undergraduate Catalog covers in detail questions concerning the undergraduate program of Southern Illinois University at Carbondale for the period from summer, 1985 through spring, 1986. It supersedes Volume 25, Number 5.

The following publications, may be obtained free from University Publications, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Graduate Catalog
Undergraduate Catalog
School of Law Catalog
Counselor's Advisement Catalog
General Information for Undergraduates
Schedule of Classes. Please specify session (fall, spring, or summer).

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Board of Trustees and Officers of Administration

Board of Trustees of Southern Illinois University

	Term Expires
Harris Rowe, *Chairman,* Jacksonville	1989
A.D. Van Meter, Jr., *Vice-Chairman,* Springfield	1987
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Marian Davis, *Acting Affirmative Action Officer*

University Calendar

Summer Session, 1985

Eight-Week Session Begins	Monday, June 10, 7:30 A.M.
Independence Day Holiday	Thursday, July 4
Final Examinations	Thursday and Friday, August 1-2
Commencement	Saturday, August 3

Fall Semester, 1985

Fall Orientation	Wednesday, August 14 — Sunday, August 18
Semester Classes Begin	Monday, August 19, 8:00 A.M.
Labor Day Holiday	Monday, September 2
Thanksgiving Vacation	Saturday, November 23, 12:00 NOON — Monday, December 2, 8:00 A.M.
Final Examinations	Monday, December 9 — Friday, December 13

Spring Semester, 1986

Semester Classes Begin	Monday, January 13, 8:00 A.M.
President's Day	Monday, February 17
Spring Vacation	Saturday, March 8, 12:00 NOON — Monday, March 17, 8:00 A.M.
Final Examinations	Monday, May 5 — Friday, May 9
Commencement	Saturday, May 10

Excused Absences for Religious Holidays

Students absent from classes because of required observances of major religious holidays will be excused. It is the student's responsibility to notify the instructor of each class that will be missed in advance of the absence. Students must also take the responsibility for making up work missed.

1 General Information

The University

Southern Illinois University at Carbondale

Southern Illinois University at Carbondale, since its doors were first opened in 1874, has taken pride in the quality of its services. Outstanding departments, distinguished faculty, thorough and inspired teaching, and a thoughtful approach to the blending of old wisdom with new knowledge, as well as student services from admission to placement, combine with the University's enviable location to provide a rewarding educational experience.

Every member of the University faculty is a student as well as a teacher bringing the products of research and scholarship into the classroom. The University has many distinguished scholars on its faculty honored by their peers for important contributions to the fields they study. Contact with these hard-working educators offers students the best possible entry into the world of today where ideas and technology mesh. As students progress in their studies they will work along with faculty members and may eventually be able to participate in ongoing research projects or set up projects of their own. Other courses may lead to internships or practicum work on campus or in the area around the University.

Morris Library, a major resource for students and faculty, contains more than 1.6 million volumes, 1.8 million units of microform, and 16,000 periodical subscriptions. These materials are in open stacks, available to every student. There are also important collections of original research materials, as well as support services such as a map library, records and tapes, and a self-instruction center. Many disciplines require laboratories; some are the traditional variety and some are in orchards, barns, hangars, machine shops, sound chambers, computer labs, archaeological digs, sewing rooms, kindergartens, and clinics.

The University offers a great variety of services to students. The Office of Admissions and Records personnel oversee registration and keep track of students' progress from entrance to graduation. Financial experts, wise in the field of money for education, work tirelessly to find the right combination of loans, grants, and on-and off-campus employment to keep each student in school. Residence halls are available on campus as are furnished and unfurnished apartments for families. Approved housing for freshmen and sophomores is monitored by the University, and those seeking other housing in Carbondale and the surrounding area have access to advice from housing staff. Counseling services are ready to help students deal with scholastic, family, emotional, medical, legal, or financial problems.

The University provides an aggressive placement program on a number of levels. Career Planning and Placement Service presents career fairs and regular visits by recruiters from large employers. Career counselors are ready to work with students from the time of their enrollment. Seminars and workshops are

conducted regularly and a career library is maintained. Some schools and departments have highly successful recruitment programs of their own. Placement services do not stop at graduation — the University keeps a current placement file for every interested graduate, and Alumni Services offers referral assistance.

Carbondale, an economic center of Southern Illinois, has been cited in a recent study as one of the fifty most desirable places to live in the United States. Only a few hours from Chicago, St. Louis, and Memphis, the University sits amid rolling hills, farmlands, and orchards just 60 miles above the confluence of the Mississippi and Ohio rivers. Glacial deposits of rock have left the area from Carbondale south ruggedly scenic and suitable for a wide range of outdoor activities. Four large recreational lakes are within minutes of the campus; the two great rivers, the spectacular 240,000-acre Shawnee National Forest, and a large number of smaller lakes, state parks, and recreational areas are within easy driving distance. The Mid-South climate is ideal for year-around outdoor activities — even a little cross-country skiing now and then. The campus itself is a marvel of landscaping planted with native trees and shrubs and blooming flora.

Activities on campus are equally inviting. There are over 300 student organizations — special interest, political, Greek, religious, service — intramurals from baseball to Ultimate Frisbee, a recreational lake on campus, eleven intercollegiate sports programs for women and ten for men, and great varieties of diverting entertainment. A large indoor recreational center contains an Olympic-sized pool, weight rooms, game courts of all kinds, diet and exercise programs, instruction, and equipment that can be checked out for outdoor recreation.

At this modern university in a rural setting one can benefit from the best of both worlds — the scenic wonders, the small-town friendliness, the easy access to all the area has to offer, and the resources of a sophisticated faculty and staff with the latest in technological marvels at its command.

Accreditations and Affiliations

North Central Association of Colleges and Secondary Schools

National Council for Accreditation of Teacher Education

Accrediting Council of the American Assembly of Collegiate Schools of Business (undergraduate and master's level programs)

Accreditation Board for Engineering and Technology, Inc.

American Association for Accreditation of Laboratory Animal Care

American Association of Museums (University Museum)

American Bar Association

American Board of Funeral Service Education (Mortuary Science program)

American Chemical Society

American Council on Education for Journalism and Mass Communication

Commission of Accreditation of Dental and Dental Auxiliary Educational Programs of the American Dental Association (Dental Hygiene and Dental Laboratory Technology programs)

Commission on Accreditation of Rehabilitation Facilities (Vocational development program)

Committee on Allied Health Accreditation (CAHEA)

American Dietetic Association (programs meet standards for traditional baccalaureate programs in field of nutrition or dietetics)

American Medical Association and American Association of Medical Colleges

American Physical Therapy Association (Physical Therapist Assistant program)

American Psychological Association (Counseling psychology and clinical training program)

American Board of Examiners in Speech Pathology and Audiology

Council on Rehabilitation Education (Rehabilitation Counseling program)

Council on Social Work Education

National Association of Schools of Art and Design

Federal Aviation Administration (Aviation Technology program)
Foundation for Interior Design Education Research
Illinois Office of Education
Superintendent of Education
State Teacher Certification Board
Illinois State Board of Education
Illinois Department of Registration and Education (Associate Degree Nursing program)
National Association of Industrial Technology (B.S. program in Industrial Technology)
National Association of Schools of Music
Liaison Committee on Medical Education of the Joint Review Committee on Education in Radiologic Technology, sponsored by the American College of Radiology and the American Society of Radiologic Technologists.
Society of American Foresters
National Shorthand Reporters Association (court reporter training program)
Association of University Programs in Health Administration (Health Care Services option of B.S. degree in Technical Careers)
National Athletic Trainers Association
National Recreation and Parks Association (National accreditation council)
University Council for Vocational Education
National Collegiate Honors Council
Upper Midwest Honors Council
Honors Council of the Illinois Region
Association of American Law Schools
National Association of Schools of Public Affairs and Administration
American Institute of Professional Geologists
Association of Research Libraries
The Association of American University Presses
National League for Nursing
Committee on Allied Health Administration and the Joint Review Committee for Respiratory Therapy Education
American Association of Airport Executives
National Fire Protection Association
Western Association Accreditation
State Agency Approval: Arizona, California, Colorado, Florida, Georgia, Illinois, Maryland, Nebraska, North Carolina, Tennessee
Photo-Marketing Association International
American Library Association (Associate Status)

Faculty

The University faculty is dedicated to excellence in teaching and to the advancement of knowledge in a wide variety of disciplines and professions. Many faculty members are well known both nationally and internationally for their many varied research contributions. The Undergraduate Catalog lists the numerous programs offered by the faculty and, in addition, in Chapter 6 of this catalog the faculty members are listed by departments in which they are appointed.

Curricula

The undergraduate majors and minors offered by Southern Illinois University at Carbondale are listed below in alphabetical order. Also indicated is whether a major, a minor, or both are offered. The academic unit which offers the major is listed as is the degree the student would expect to receive upon graduation. If a major may be completed in more than one academic unit, the other units are listed on additional lines. For example, the biological sciences major is offered through the College of Science. Students planning to teach biological sciences may also complete the major in the College of Education. The requirements for each of the programs listed below are explained in Chapter 4 of this bulletin. The degree abbreviations used are: A.A.S., Associate in Applied Science; B.A., Bachelor of Arts; B.F.A., Bachelor of Fine Arts; B.Mus., Bachelor of Music; and B.S., Bachelor of Science.

In addition to the majors and minors listed, preprofessional programs may be

completed in dentistry, law, medicine, nursing, optometry, pharmacy, physical therapy, podiatry, public health, theology, and veterinary science.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Accounting	X		College of Business and Administration	B.S.
Administration of Justice	X	X	College of Human Resources	B.S.
Administrative Sciences	X		College of Business and Administration	B.S.
African Studies		X		
Aging Studies		X		
Agribusiness Economics	X	X	School of Agriculture	B.S.
Agricultural Education	X		School of Agriculture	B.S.
			College of Education	B.S.
Agricultural Education and Mechanization	X	X	School of Agriculture	B.S.
Agriculture, General	X	X	School of Agriculture	B.S.
Allied Health Careers Specialities	X		School of Technical Careers	A.A.S.
Animal Industries	X	X	School of Agriculture	B.S.
Anthropology	X	X	College of Liberal Arts	B.A.
Aquatics[3]		X		
Architectural Technology	X		School of Technical Careers	A.A.S.
Art	X	X	College of Communications and Fine Arts	B.A., B.F.A.
			College of Education	B.S.
Asian Studies		X		
Athletic Training[3]		X		
Automotive Technology	X		School of Technical Careers	A.A.S.
Aviation Flight	X	X	School of Technical Careers	A.A.S.
Aviation Maintenance Technology	X		School of Technical Careers	A.A.S.
Aviation Management	X		School of Technical Careers	B.S.
Avionics Technology	X		School of Technical Careers	A.A.S.
Biological Sciences	X	X	College of Science	B.A.
			College of Education	B.S.
Black American Studies		X		
Botany	X	X	College of Science	B.A.
			College of Education	B.S.
Business and Administration	X		College of Business and Administration	B.S.
Business Economics	X		College of Business and Administration	B.S.
Business Education[6]	X	X	College of Education	B.S.
Career Development	X		School of Technical Careers	B.S.
Chemistry	X	X	College of Science	B.A., B.S.
			College of Education	B.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Child and Family	X	X	College of Education	B.S.
Chinese[1]		X		
Cinema and Photography	X		College of Communications and Fine Arts	B.A.
Civil Engineering	X		College of Engineering and Technology	B.S.
Classical Civilization[1]		X		
Classics[1]	X		College of Liberal Arts	B.A.
			College of Education	B.S.
Clothing and Textiles	X	X	College of Education	B.S.
Coaching[3]		X		
Commercial Graphics — Design	X		School of Technical Careers	A.A.S.
Communication Disorders and Sciences	X		College of Communications and Fine Arts	B.S.
			College of Education	B.S.
Community Development		X		
Comparative Literature		X		
Computer Science	X	X	College of Liberal Arts	B.A.
Construction Technology — Building	X		School of Technical Careers	A.A.S.
Consumer Economics and Family Management	X		School of Technical Careers	B.S.
Consumer Studies[2]		X		
Dance[3]		X		
Dental Hygiene	X		School of Technical Careers	A.A.S.
Dental Technology	X		School of Technical Careers	A.A.S.
Design	X		Communication and Fine Arts	B.A.
Early Childhood Education[4]	X		College of Education	B.S.
Earth Science		X		
East Asian Civilizations[1]		X		
Economics	X	X	College of Liberal Arts	B.A.
Educational Media[4]		X		
Electrical Engineering	X		College of Engineering and Technology	B.S.
Electronic Data Processing	X	X	School of Technical Careers	A.A.S.
Electronics Management	X		School of Technical Careers	B.S.
Electronics Technology	X		School of Technical Careers	A.A.S
Elementary Education[4]	X		College of Education	B.S.
Engineering	X		College of Engineering and Technology	B.S.
Engineering Technology	X		College of Engineering and Technology	B.S.
English	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Finance	X		College of Business and Administration	B.S.
Fire Science Management	X		School of Technical Careers	B.S.
Food and Nutrition	X		School of Agriculture	B.S.
Forestry	X		School of Agriculture	B.S.
French[1]	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Geography	X	X	College of Liberal Arts	B.A., B.S.
			College of Education	B.S.
Geology	X	X	College of Science	B.A., B.S.
German[1]	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Greek[1]		X		
Health Care Management	X		School of Technical Careers	B.S.
Health Education	X		College of Education	B.S.
History	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Home Economics Education[6]	X		College of Education	B.S.
Industrial Technology	X		College of Engineering and Technology	B.S.
Interior Design	X		School of Technical Careers	B.S.
Japanese[1]		X		
Journalism	X	X	College of Communications and Fine Arts	B.S.
Language Arts (English and Reading)[4]	X		College of Education	B.S.
Latin[1]		X		
Law Enforcement	X		School of Technical Careers	A.A.S.
Linguistics	X	X	College of Liberal Arts	B.A.
Marketing	X		College of Business and Administration	B.S.
Mathematics	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
			College of Science	B.S.
Mechanical Engineering	X		College of Engineering and Technology	B.S.
Microbiology	X	X	College of Science	B.A.
Mining Engineering	X		College of Engineering and Technology	B.S.
Mortuary Science and Funeral Service	X		School of Technical Careers	A.A.S.
Museum Studies		X		
Music	X	X	College of Communications and Fine Arts	B.Mus., B.A.
			College of Education	B.S.
Nursing	X		School of Technical Careers	A.A.S.
Occupational Education[6]	X		College of Education	B.S.

SUBJECT	MAJOR	MINOR	ACADEMIC UNIT	DEGREE
Paralegal Studies for Legal Assistants	X		College of Liberal Arts	B.S.
Philosophy	X	X	College of Liberal Arts	B.A.
Photographic Production Technology	X		School of Technical Careers	A.A.S.
Physical Education	X	X	College of Education	B.S.
Physical Therapist Assistant	X		School of Technical Careers	A.A.S.
Physics	X	X	College of Science	B.S.
			College of Education	B.S.
Physiology	X	X	College of Science	B.A.
Plant and Soil Science	X	X	School of Agriculture	B.S.
Political Science	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Psychology	X	X	College of Liberal Arts	B.A.
Radio-Television	X		College of Communications and Fine Arts	B.A.
Radiologic Technology	X		School of Technical Careers	A.A.S.
Recreation	X	X	College of Education	B.S.
Religious Studies	X	X	College of Liberal Arts	B.A.
Respiratory Therapy Technology	X		School of Technical Careers	A.A.S.
Russian[1]	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Secretarial and Office Specialties	X	X	School of Technical Careers	A.A.S.
Social Studies	X		College of Education	B.S.
Social Work	X		College of Human Resources	B.S.
Sociology	X	X	College of Liberal Arts	B.A.
Spanish[1]	X	X	College of Liberal Arts	B.A.
			College of Education	B.S.
Special Major[7]	X			B.A., B.S.
Special Education	X		College of Education	B.S.
Speech Communication	X	X	College of Communications and Fine Arts	B.S.
			College of Education	B.S.
			College of Liberal Arts	B.A.
Theater	X	X	College of Communications and Fine Arts	B.A.
Tool and Manufacturing Technology	X		School of Technical Careers	A.A.S.
Uncommon Languages[5]		X		
University Studies	X			B.A., B.S.
Women's Studies		X		
Zoology	X	X	College of Science	B.A., B.S.
			College of Education	B.S.

[1] Described under Foreign Languages and Literatures
[2] Described under Consumer Economics and Family Management
[3] Described under Physical Education
[4] Described under Curriculum, Instruction, and Media
[5] Described under Linguistics
[6] Described under Vocational Education Studies
[7] A special major may be completed in any academic unit

Visits to Campus

Southern Illinois University at Carbondale welcomes the opportunity to visit with prospective students. Mondays through Fridays, 8 A.M. to 4:30 P.M., admissions counselors are available to discuss admissions requirements and procedures, the various programs offered at Southern Illinois University at Carbondale, the procedures for applying for housing and financial aid, as well as general information about the University and community. The counselors can also arrange guided tours of the campus and meetings with representatives of appropriate departments or offices. In order to benefit most from the visit to Southern Illinois University at Carbondale, it is advisable to arrive before 2 P.M.

Arrangements for a campus visit can be made by writing School/College Relations, Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, or by calling a toll free number in Illinois (800-642-3531) or the direct number (618-453-4381). Arrangements should be made at least two weeks in advance of the day requested. Groups desiring to visit the campus are urged to give a month's advance notice, specifying the number to attend, day and time of arrival, and special interests or requests. For those who prefer a weekend visit, a schedule of guest days (open house activities) can also be obtained by contacting the office above.

Applying for Admission

Request application from the Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, or call toll free in Illinois 800-642-3531. For admissions requirements see Chapter 2.

Campus Living

On-Campus Housing for Single Students

Southern Illinois University at Carbondale offers a variety of living experiences through the on-campus residence halls for single students. These halls provide not only the usual room and board but also have special opportunities for participation in recreational and academic activities. Two distinct advantages of living on campus are the ready access to all facilities of the campus, such as the library, and the absence of a need for special transportation since all campus activites are within easy walking distance. Meal service in all areas except Greek Row provide 20 meals a week; three meals each day six days a week and breakfast and noon dinner on Sunday. Unlimited second helpings are offered, and a new feature is a special diet table for students with special health problems. Co-ed living is available in all housing areas. All rooms are equipped with twin-sized beds, closet space, chest of drawers, desks, study chairs, and draperies. Linen service provides two sheets and one pillowcase weekly. Study lamps, pillows, towels, and other bedding materials must be provided by the student.

Freshmen under the age of 21, not living with parents or guardians, are required to live in on-campus residence halls, or similar privately-owned residence halls. The privately-owned residence halls must provide facilities, food service, and supervision comparable to on-campus housing. Sophomores under the age of 21, not living with parents or guardians, are required to live in on-campus residence halls or University approved off-campus housing. Sophomore approved off-campus housing includes rooming houses and residence hall apartments. There are no university regulations for junior, senior, graduate, married students or those students 21 years of age or over. Housing contracts are for the school year (fall and spring semesters) with summer contracts being issued separately. The residence halls close during breaks and official University vacations.

Thompson Point Residential Area. The Thompson Point coeducational residential area consits of eleven air conditioned halls, each housing approximately 120 students. Lentz Hall serves as the commons unit for food service and such services as a library, post office, snack bar, recreation center, and game rooms. The halls are located on the shores of Lake-On-The-Campus and provide unique opportunities at the lake for activities such as swimming, boating, fishing, and hiking. Also included in the Thompson Point residential area are special facilities for handicapped students.

University Park Residential Area. The University Park coeducational residential area is air conditioned and consists of Neely Hall, a 17-story residence hall and Allen, Boomer, and Wright halls, 4-story men's triad buildings. Trueblood Hall serves as the commons unit providing the cafeteria, snack bar, game room, and post office. University Park is connected to the campus by an overpass which reaches from Trueblood Hall over the streets to the center of campus.

Brush Towers. Brush Towers consists of two 17-story, air-conditioned coeducational halls, Mae Smith Tower and Schneider Tower. The commons unit is Grinnell Hall which provides the cafeteria, snack bar, and game room.

Greek Row. The Greek Row Housing area provides housing for recognized sororities and fraternities. Each building houses about fifty students and includes lounge and dining area, kitchen, and snack bar. Assignment of students to this area is by invitation from the fraternal organization.

More information or application forms may be obtained by writing the supervisor of contracts, University Housing, Building D, Washington Square.

Housing for Married Students

There are 576 apartments, both furnished and unfurnished, available for married students. The costs are from $205 to $290 a month with all utilities furnished.

Off-Campus Facilities

University Housing seeks continually to influence both the availability and quality of off-campus housing for students in terms of meeting as fully as possible the educational, physical, social, and economic needs of students living off campus as these needs relate to the objectives of the University. Numerous accepted living centers for freshmen and sophomore students off campus aid in the relationship between the student's living environment and progress toward the attainment of the educational goals. The cost for off-campus housing ranges from $250 to $450 a month. Information may be obtained by writing directly to the supervisor of Off-Campus Housing, Building B, Washington Square. It is not considered wise to contract for an off-campus living facility, sight unseen.

Student Work and Financial Assistance

The Office of Student Work and Financial Assistance aids students in seeking monetary assistance to finance their postsecondary education at Southern Illinois University at Carbondale.

A package of financial aid is prepared for those students who qualify. The package may include scholarships, grants, work, and loans. The financial aid package offered is contingent upon both the availability of program funds and each student's demonstrated financial need, as determined by the American College Testing Program Family Financial Statement (ACT/FFS) form.

Grants and scholarships are gift aid which are not repaid to the donor. Loans

are repaid after the student leaves school but are offered at a lower than market rate of interest. Student work is offered to all students who desire to earn money while attending Southern Illinois University at Cardondale. The amount a student may earn is determined by the amount of other financial aid received. The total aid including work cannot exceed the cost of attending the University.

Southern Illinois University at Carbondale distributed approximately $50 million in financial aid last year to approximately 70% of all students. Over 5,000 student workers were employed by the university.

Major Financial Aid Programs

Southern Illinois University at Carbondale participates in the major federal and state as well as institutionally-funded aid programs. These include programs such as the Pell Grant, Illinois State Scholarship Commission Monetary Award, Guaranteed Student Loan, National Direct Student Loan, Student-to-Student Grant, Supplemental Educational Opportunity Grant, and the Student Work Program.

The *Financial Aid Opportunities* brochure summarizes the major types of financial aid coordinated through the Office of Student Work and Financial Assistance. The brochure includes a chart which lists more than forty types of financial aid including a brief description of each program, the application procedures, and the corresponding deadlines. A copy of the brochure is available upon request.

Grants. The major grant programs include the Pell Grant and the Supplemental Educational Opportunity Grant. Both of these are based on financial need as determined by the ACT/FFS.

Scholarships. The largest state grant program is funded through the Illinois State Scholarship Commission. The ISSC Monetary Award is also based on need as determined by the ACT/FFS. The award provides tuition and fees.

Southern Illinois University at Carbondale distributes several scholarships based on academic achievement including the SIUC Academic Scholarship for Entering Freshmen and Community College Transfer Students, the Presidential Scholars Award, the SIUC Foundation's Scholars Award, and the SIUC Foundation Merit Award. Students eligible to receive these awards will be contacted directly by the Office of Admissions and Records.

Students interested in seeking a private grant or scholarship should check as many sources as possible including high schools, local clubs and civic organzations, businesses, church groups, alumni organizations, and commercial lending institutions. In addition, public libraries are an excellent source for information on state and private scholarship money.

Loans. The largest loan programs include the Guaranteed Student Loan, the Parental Loan to Assist Undergraduate Students, and the National Direct Student Loan. For automatic consideration of the National Direct Student Loan, students must submit a current ACT/FFS. To apply for the other two loans, students must obtain the loan application from their hometown bank or local lending institution.

Employment. Students wishing to participate in the on-campus student work program must have a current ACT/FFS on file. Students can work a maximum of twenty hours a week at the prevailing minimum wage. Once students arrive on campus they should review the jobs available board in the Office of Student Work and Financial Assistance.

A representative is available to give referrals to part-time off campus jobs. Approximately 3,000 students work off-campus during an academic year.

Other Types of Aid. Veterans, social security, railroad retirement, and civil service retirement benefits are also available to those who qualify. The *Financial Aid Opportunities* brochure gives more information on these and other financial aid programs.

Application for Financial Assistance for the 1985-86 Academic Year

To determine financial need, it is necessary for students, with their parents, to complete and submit the 1985-86 ACT/FFS. To have Southern Illinois University at Carbondale receive a copy of the need analysis, students must enclose the ACT processing fee and enter the proper school code (#1144). Southern Illinois University at Carbondale does not accept the College Scholarship Service Financial Aid Form (CSS/FAF).

The ACT/FFS allows students to apply for the majors programs coordinated through the office of Student Work and Financial Assistance. Students should complete and mail their ACT/FFS form as early as possible since campus-based aid funding is limited and distributed to eligible students on a first-come, first-served basis. Priority consideration for campus-based aid will be given to those students who complete and mail their ACT/FFS before April 1,1985. The ACT/FFS forms are available in January and may be obtained from local high schools, community colleges, or from the Office of Student Work and Financial Assistance.

Transfer Students

Students who have attended another college or university will be classified as transfer students. Federal regulations requires that transfer students applying for financial aid have a financial aid transcript sent to the Office of Student Work and Financial Assistance indicating all financial aid received from previous schools. Even though students may not have received financial assistance, verification of that fact is required. No aid will be awarded until all financial aid transcripts are received. Financial aid transcript forms may be obtained from the Office of Student Work and Financial Assistance.

Students who receive the National Direct Student Loan, Supplemental Educational Opportunity Grant, or student work must reapply for those awards by submitting the 1985-86 ACT/FFS. Students who receive Guaranteed Student Loans or Parental Loan to Assist Undergraduate Students should contact their lenders.

Transfer students who receive Pell Grant must obtain a duplicate set of the Student Aid Report from the Pell Grant program to submit to the Office of Student Work and Financial Assistance. Transfer students who receive ISSC awards must change the school name on the Pell Grant student aid report and resubmit to the Pell Grant program to be forwarded to ISSC. ISSC will recompute and adjust the ISSC award to reflect the cost of attending Southern Illinois University at Carbondale.

Academic Progress Standards for Financial Assistance

Southern Illinois University at Carbondale requires that a student be making satisfactory progress toward a degree if that student wishes to receive financial aid funds. A student is making satisfactory progress toward a degree if successfully meeting two basic academic standards. First, a student must complete a reasonable number of credit hours toward a degree each academic year. Second, a student must maintain a scholastic standing, derived from grades, that allows for continued enrollment at the University under current academic guidelines. A copy of the policy on satisfactory progress is available upon request from the Office of Student Work and Financial Assistance.

Since financial aid programs undergo frequent change, students should be cer-

tain they have the most current information. Students desiring additonal information should contact the Office of Student Work and Financial Assistance, telephone (Area Code 618) 453-4334.

2 Academic Regulations and Procedures

Admission Policies, Requirements, Procedures

In order to attend classes at Southern Illinois University at Carbondale, students must gain official admission to the University and must complete the enrollment process, which includes advisement, registration, and payment of fees.

Applications for admission to the University are accepted anytime during the calendar year but should be submitted at least thirty days prior to the beginning of classes.

The University may close admission for students or programs whenever the availability of faculty or facilities warrant.

All beginning freshman applicants must submit entrance examination scores except those who are twenty-one years of age or older who qualify for admission by class rank. Transfer students are also required to submit entrance examination scores if they are less than twenty-one years of age and have fewer than twenty-six semester hours (thirty-nine quarter hours) of acceptable transfer work. Currently the ACT (American College Test) is the required entrance examination.

The College of Engineering and Technology has implemented new admission policies for engineering majors. These new policies are described in Chapter 3.

Admission of Freshmen

To be eligible for admission, applicants must be graduates of recognized high schools. Graduates of nonrecognized high schools may be admitted to the University by an entrance examination. Persons who have not completed high school may be considered for admission by completing the GED test provided they meet the requirements to write this examination.

All admissions granted students while in high school are subject to the completion of high school work and graduation from high school.

Students entering the University as freshmen are admitted in the schools or colleges within the University that offer the academic programs they indicate they plan to pursue. Students who are undecided as to the course of study they want to follow are admitted to the Undergraduate Academic Services unit in pre-major advisement or to selected other units with an undecided major.

Students who are admitted as beginning freshmen but enroll at another college or university prior to their enrollment at Southern Illinois University at Carbondale will automatically void their admission as beginning freshmen. It will be necessary for the student whose admission is voided to reapply for admission and be considered for admission accordingly.

While beginning freshmen are considered for admission on the basis of a combination of class rank and test scores, it is strongly recommended that students will have completed in high school a comprehensive academic program. Recent studies have indicated a number of deficiencies among students in such basic

skills as reading, writing, and mathematics. Therefore, students should attempt to complete as many courses as possible in English, mathematics, science, etc., before entering college. It is possible the University will require specific high school subjects be completed prior to admission. These requirements may differ depending on the major or program of study the student wants to pursue.

ADMISSION OF FRESHMEN TO BACCALAUREATE PROGRAMS

High school graduates who: (1) have an entrance examination score at the fiftieth precentile or higher or (2) have an entrance examination score at the thirty-third percentile or higher and rank in the upper half of their graduating class based on class rank are eligible for admission to any semester. Those students who qualify for admission to any semester will be considered for admission after completion of their junior year in high school.

High school graduates who do not meet the admission requirements above are urged to submit applications for admission to the University. If they demonstrate potential for academic success, they may be considered for admission through the Special Admissions Program. Students admitted through the Special Admissions Program are admitted in good standing. They are required to participate in academic assistance activities.

High school graduates who do not meet the requirements above but who rank above the thirty-third percentile by either class rank or entrance examination scores are admissible for the spring semester on a conditional basis. The conditions are (1) that the student must enroll for a minimum of twelve semester hours and complete at least ten semester hours of graded work and (2) that the student is admitted on probation and must meet the scholastic requirements for probationary students. Students who fail to meet either condition may not continue in attendance subsequent semesters unless approved for readmission by the dean of the school or college. Ordinarily, the student will not be considered for readmission for at least one academic year. Students who have been admitted or who qualify to be admitted on condition may earn transfer credit at another college or university prior to their spring semester matriculation, provided they earn a *C* average or above for any transfer work completed. If they do not earn a *C* average for transfer work, their admission will be withdrawn. Students who present twenty-six semester hours or more of transfer work should refer to the section of the bulletin which explains admission of transfer students.

Students who are less than twenty-one years of age and have completed satisfactorily the General Educational Development Test can qualify for admission by achieving an entrance examination score above the thirty-third percentile.

ADMISSION OF FRESHMEN TO ASSOCIATE DEGREE PROGRAMS

High school graduates who rank in the upper two-thirds of their graduating classes based upon class rank or by score on the University entrance examinations are eligible for admission to any semester. Students who have passed the General Educational Development Test are also eligible for admission for any semester. Graduates whose rank is lower third by either class rank or test scores are admissible to the spring semester on a conditional basis. The conditions are: (1) that the student must enroll for a minimum of twelve semester hours and complete at least ten semester hours of graded work and (2) that the student is admitted on probation and must meet the scholastic requirements for probationary students. Students who fail to meet either condition may not continue in attendance subsequent semesters unless approved for readmission by the dean of the School of Technical Careers. Ordinarily, the student will not be considered for readmission for at least one academic year.

Students who did not meet the University baccalaureate admission requirements to enter as freshmen from high school during the regular academic year and

elect to enter an associate degree program in the School of Technical Careers will not be considered for admission to a four-year program until they have completed 26 semester hours and have an overall *C* average.

Because a number of courses are offered on a sequential basis in the School of Technical Careers, some programs begin only in the fall. Applicants should review the admission application guide to determine when selected programs will allow students to enter the School of Technical Careers.

Admission of Transfer Students

A student who has attended another college, university, or postsecondary institution is required to submit an official transcript from each institution attended. All transcripts become the official property of Southern Illinois University at Carbondale and will not be returned nor issued to another institution.

Students applying for admission to the University with previous post secondary education will be considered for admission as follows:

1. A student who has been enrolled in an institution which is accredited by one of the regional accrediting associations or an institution in candidacy status will be considered for admission on the basis of the regular transfer admission standards, or
2. A student who has attended an institution which is not accredited by or in candidacy status with one of the regional accrediting associations will be considered for admission on the basis of the regular transfer admission standards if the credit from that institution is accepted in a similar manner by the reporting institution in that state, or
3. A student who has completed a nonbaccalaureate two-year or equivalent terminal program with a *C* average in an institution which is not accredited by or in candidacy status with one of the regional accrediting associations will be admitted if the institution is one recognized by NATTS, AMA, ABET, or similar accrediting bodies recognized by the National Commission on Accrediting or the United States Office of Education. Students admitted from such institutions should not expect to receive credit at Southern Illinois University at Carbondale except in programs which offer occupational credit.

Even though a student has attended another college or university, the student is required to have graduated from a recognized high school or completed satisfactorily the General Educational Development Test.

All grades earned in transferrable courses and in courses with a grade point value are used to calculate the grade point averages used for admission purposes. This includes grades earned in repeated courses, except those completed prior to the 1971 summer session. Transfer work is calculated according to Southern Illinois University at Carbondale regulations rather than those of institutions students have previously attended.

Transfer students who have been suspended for any reason other than academic failure must be cleared by the Student Life Office before admission will be granted by the director of admissions.

Transfer students will be admitted directly to the school or college in which their major fields of study are offered. Students who are undecided about their major fields of study will be admitted to the General Academic Programs unit in pre-major advisement or to selected other units with an undecided major.

Transfer students who have completed a minimum of one year of work can be considered for admission one year in advance of their date of matriculation if they plan to transfer without interruption. Students who have completed less than one year of study may initiate the admission process after the completion of one semester or one quarter of work. Students who are enrolled in a collegiate program for the first time and wish to transfer upon completion of their first term may do so if they meet the University's admission requirements for beginning freshmen. Admission may also be granted one year in advance for selected programs to

students who are in their first term of a collegiate program provided they qualify for admission as beginning freshmen. Admission granted to a student on partial or incomplete records is granted with the condition that the student will have an overall *C* average and be eligible to continue at the last school attended at the time of matriculation. Students whose final transcripts indicate a grade point average or scholastic standing less than that required for unconditional admission will have their initial admission withdrawn.

ADMISSION OF TRANSFER STUDENTS TO BACCALAUREATE PROGRAMS

Students who have an overall *C* average, 2.0 on a 4.0 scale (all institutions), and are eligible to continue their enrollment at the last institution of attendance will be eligible for admission to any semester. If a student is seeking admission with fewer than twenty-six semester hours, the applicant will be required to meet the admission requirements of a beginning freshman as well as a transfer student for unconditional acceptance.

Students who do not meet the University's transfer admission requirements will have their applications reviewed thoroughly. Students who have been placed on scholastic probation or academic suspension from another college or university will be considered for admission by the office of Admissions and Records only if an interruption of education has occurred and there is tangible evidence that additional education can be completed successfully. Tangible evidence might include: (1) an interruption of schooling for one or more years, (2) military experience, (3) work experience, and (4) previous academic performance.

Students who have graduated with an associate degree in a baccalaureate-oriented program from an accredited Illinois two-year institution may enter Southern Illinois University at Carbondale in good academic standing any semester provided they have not taken additional college work since their graduation. If they have, their admission will be considered on the basis of their conformity to the University's regular transfer admission standards.

Students who are transferring from programs which are not baccalaureate-oriented should refer to the section titled evaluation of transfer credit for additional information.

ADMISSION OF TRANSFER STUDENTS TO ASSOCIATE DEGREE PROGRAMS

Students who have an overall *C* average, 2.0 on a 4.0 scale (all institutions), and are eligible to continue their enrollment at the last institution attended are eligible to be considered for admission for any semester. If a student is seeking admission with fewer than twenty-six semester hours, the applicant will be required to meet the admission requirements of a beginning freshman as well as transfer students for unconditional acceptance.

Students who do not meet the University's transfer admission requirements will have their applications reviewed thoroughly. Students who have been placed on scholastic probation or academic suspension from another college or university will be considered for admission by the Office of Admissions and Records only if an interruption of education has occurred and there is tangible evidence that additional education can be completed successfully. Tangible evidence might include: (1) an interruption of schooling for one or more years, (2) military experience, (3) work experience, or (4) previous academic performance.

A student who is admitted to an associate degree program as a transfer student and then decides at a later date to enter a four-year program must meet the University's baccalaureate admission requirements at the time of transfer.

New students may be admitted only for the fall semester to select majors in the School of Technical Careers. Please consult the admission application guide to determine when new students can be admitted to two-year programs in the School of Technical Careers.

Admission of International Students

In general, international students must meet the same academic standards for admission as those required of native students. As there is considerable variation between educational systems throughout the world, precise comparative standards are not always available. Therefore, international students are considered for admission on the basis of their former academic work, English proficiency, and evidence of adequate financial resources.

In addition to submitting copies of secondary school records and, when applicable, college transcripts, international students must also submit scores from TOEFL examination (Test of English as a Foreign Language). TOEFL scores are required of all international students who (1) have completed their secondary education in a country where English is not the native language, (2) have completed fewer than two years study in a United States high school, (3) have completed fewer than two years (60 semester hours) of collegiate training in an accredited United States college or university. Students who have completed their secondary education in a country where English is the native language are required to submit scores from either the American College Test or the Scholastic Aptitude Test.

Students who have acquired immigrant status are also required to demonstrate English proficiency. English proficiency can be demonstrated by successful completion of the TOEFL examination or a special English examination administered by the Center for English as a Second Language. Immigrants who have completed at least two years of study in a United States high school, have earned sixty semester hours in a United States college or university, or have completed their secondary education in a country in which English is the native language are not required to submit TOEFL scores or write a special English examination. They may, however, be required to submit university entrance examination scores if they are seeking admission as beginning freshmen or transfer students with fewer than twenty-six semester hours.

International students whose secondary school and college records are acceptable for admission purposes must also receive high enough TOEFL scores for unconditional admission. Students with a TOEFL score of 525 or higher will be granted unconditional admission. Applicants whose TOEFL score is less than 525 will be admitted contingent upon completion of an English re-test administered by the Center for English as a Second Language. Students who fail to submit TOEFL scores, or who do not submit acceptable TOEFL scores, will be required to attend courses at the Center for English as a Second Language.

International students interested in making application to Southern Illinois University at Carbondale should address their inquiries to the Office of Admissions and Records, Southern Illinois University at Carbondale, Illinois 62901.

This school is authorized under Federal law to enroll nonimmigrant alien students.

Admission of Former Students

Students who have attended another institution since their previous enrollment at Southern Illinois University at Carbondale must submit an official transcript from that institution before they can be considered for readmission. In addition, a student who has a financial obligation to the University must clear this hold before being considered for re-admission. Students who were suspended for scholastic or disciplinary reasons during their previous enrollment at the University must be approved for re-admission by the appropriate academic or student services dean before they can be re-admitted to the University. Students with less than a *C* average must be approved for readmission by an academic dean if they are entering an academic unit other than the one in which they were previously enrolled.

It is advisable for former students to initiate the readmission process with the

Office of Admissions and Records early so that all inquiries may be answered and the applicants can find time to complete any special requirements that may be imposed upon them. (See Scholastic Probation and Suspension System elsewhere in this catalog for further information.)

Admission of Special Categories of Students

Several types of students are given special consideration when seeking admission to the University. These are described below:

ADMISSION OF VETERANS

Veterans seeking admission or readmission to the University are admitted in good standing regardless of their previous academic record provided that either (a) no additional education has been attempted or (b) such additional education has been of *C* quality or better. Prior academic work of an admitted reentering veteran is counted together with all subsequent work after admission. Veterans are required to submit all required admission credentials before their applications can be processed. This includes high school transcripts or GED scores and official transcripts from each college or university previously attended.

Military personnel on active duty in any branch of the United States military are expected to meet the same admission requirements as a veteran. Students in military programs are admitted directly into the degree program in which they are enrolling. Military program students whose credentials are not submitted during the first semester will not be allowed to enroll further until all credentials are received.

EARLY ADMISSION POLICY FOR FRESHMEN

Exceptionally capable high school students who (a) have completed their junior year, (b) are recommended by their high school principals, and (c) are approved by the director of admissions of the University will be permitted to enroll for University courses to be taken concurrently with their senior year of high school work. Such students will also be permitted to enroll for University courses offered during the summer session between their junior and senior years of high school, without being concurrently enrolled in the secondary school. Enrollment during the summer for students participating in this early admission program is limited to eight semester hours.

The early admission program is intended to be an acceleration and enrichment experience. Students should avoid taking university classes in those subjects in which additional work might be taken in high school. When a high school representative specifically recommends a course or courses to be taken, a university academic adviser will assist the student in arranging a schedule.

It is expected that high school principals will judge each case on its individual merits, and that in making their selections and recommendations they will consider such things as:

a. the rank held by the students in their high school classes;

b. the results of any standardized test which the students may have taken;

c. the opinion of the students' teachers regarding their aptitude for college level work; and

d. the opinion of the students' teachers regarding the students' having attained sufficient maturity to adjust to the social and emotional interactions involved.

ADMISSION OF ADULTS AS UNCLASSIFIED STUDENTS

Adults who have graduated from high school or who have passed the GED tests can be considered for admission as unclassified students. Students in this special category are non-degree students and are not required to submit all records normally required for admission to degree programs.

Non-military personnel whose admission credentials are incomplete are admitted to off-campus courses or degree programs as unclassified students. Unclassified students taking courses in off-campus degree programs have one semester to submit all of their admission records. Future registrations will not be allowed for students who are participating in off-campus degree programs and have incomplete admission records. Students who are taking off-campus courses in which a degree program is not offered may take twenty-six semester hours before they are required to submit all of their academic records. Those students whose records remain incomplete upon completion of twenty-six semester hours will not be allowed to register for any additional courses.

Records submitted by students participating in off-campus courses and degree programs will be reviewed in accordance with current University admission policies. Students who have completed fewer than twelve semester hours at Southern Illinois University at Carbondale and did not meet the current admission requirements will have their academic status changed to scholastic probation.

ADMISSION OF TRANSIENT STUDENTS

Students who are attending other collegiate institutions and want to enroll for one semester must submit an application for admission and documentation indicating they have an overall *C* average and are eligible to continue their enrollment at the last institution attended. This documentation can be a letter from the registrar or admissions and records office of the last institution attended or a student's most recent transcript or grade report. Transient students who request to continue their enrollment for subsequent semesters must submit all documents required for admission and meet the University's current admission policies.

Applying for Admission

High school students are urged to initiate the admission process during the seventh semester in high school. Transfer students who have completed a minimum of one year of work can be considered for admission one year in advance of their date of matriculation if they plan to transfer without interruption. Transfer students who have not completed one year of study may initiate the admission process after the completion of one semester or one quarter of work. Students who delay their admission processing until near the start of the semester which they wish to enter may find that they are unable to do so because all necessary documents required before the admission decision will be made have not been received. It is particularly important for transfer students to initiate the admission application process well before the starting date of the semester. Otherwise, delay in getting started, undesirable class schedules, or inability to attend the desired semester may result. Documents required in the admission process are listed below.

The admission process is initiated by writing to Office of Admissions and Records, Southern Illinois University at Carbondale, Carbondale, Illinois 62901, requesting admission materials. The materials that are sent include the application and related forms that need to be completed along with procedural instructions. Information is also included relative to housing and financial assistance.

DOCUMENTS REQUIRED FOR ADMISSION

Among the items required by the University before an admission decision is made are the following:

1. The application for admission.
2. Transcripts of previous educational experience. High school students should submit two copies of the high school transcript or a copy of the General Educational Development Test scores. Transfer students must submit to the Office of Admissions and Records an official transcript from each institution

previously attended. In addition, transfer students who have earned fewer than 26 semester hours (39 quarter hours) of transfer work must provide the University a copy of their high school transcript or General Educational Development Test scores. Transfer students who have attended an institution whose credit is not acceptable for admission must also submit copies of their high school transcripts and ACT scores.

3. University entrance examination scores. All students who are less than twenty-one years of age applying for admission directly from high school and all transfer students who have completed fewer than 26 semester hours (39 quarter hours) must have their official ACT scores sent to the University from the American College Testing Program, Box 451, Iowa City, Iowa 52240.

Applications for housing and financial assistance are separate from the admission process and directions relating thereto are contained in the brochures on these subjects which the students receive as part of the admissions process.

Transfer Credit

Transfer credit for students admitted to the university is evaluated for acceptance toward University and General Education requirements by the Office of Admissions and Records after the admission decision has been made. All credit from a regionally accredited institution, and those in candidacy status, or from an institution that has its credit accepted by the reporting institution in the state is accepted at the time of admission. Courses which are remedial or developmental will not be accepted for transfer. The Office of Admissions and Records will determine the acceptance of credit and its applicability toward General Education requirements. Although transfer credit from baccalaureate and non-baccalaureate programs may be considered in the admissions process, the acceptance of such credit toward specific programs requirements will be made by the department or agency directing the program.

All credit which is accepted for transfer and which is not applied to General Education requirements or to a specific program will be considered elective credit. The decision will be made depending upon the program the student has completed and the program entered at Southern Illinois University at Carbondale. A student should not expect to receive credit if the transfer work was taken at a school which is neither regionally accredited or whose credit is not accepted by the reporting institution in the state.

Completion of an associate degree in a baccalaureate oriented program in an accredited Illinois two-year institution provides that the student will: (a) be accepted with junior standing and (b) be considered to have completed the General Education requirements. Associate degrees earned at other than Illinois two-year institutions will be reviewed by the Office of Admissions and Records. If the degree is determined to be baccalaureate-oriented, the same benefits will be extended to those graduates. Credit from an accredited two-year institution is limited only by the provision that students must earn at least 60 semester hours of work at Southern Illinois University at Carbondale or at any other approved four-year institution and must complete the residence requirements for a degree from the University.

Further information on the application of transfer work toward satisfying General Education and graduation requirements may be found in Chapter 3.

Orientation, Advisement, Registration

Through a carefully designed system of orientation, academic advisement, and registration the University attempts to assure entering students an efficient and

effective introduction to the University prior to the time they start class attendance. A more extensive program is provided for those students entering during the fall semester while abbreviated activities are in operation for the other semesters.

The University conducts an advance registration system. All continuing and new students have the opportunity and are expected to complete advisement and registration for a semester before its actual start.

During the summer several weeks are set aside for new freshman and transfer students admitted for fall semester to complete advisement and registration. Students are invited to have their parents accompany them so they too may obtain a better understanding of the University than might otherwise be the case. At the start of the fall semester new students participate in orientation activities during which time they receive introduction to university life.

Starting in May and extending through June the University notifies new students admitted for the fall semester when they are to come to the campus for advisement and registration. Through this process only the number of students that can be efficiently handled are involved each day. Students who cannot come to the campus during the summer or who delay applying for admission beyond the advance registration period may register at the start of the fall semester but are required to come to campus a few days before those who have registered during the summer period.

Similar procedures are followed at the start of the other semesters. Admitted students are kept informed of orientation, advisement, registration procedures, and the times when they occur by the Office of Admissions and Records in cooperation with the Student Activities Office.

Academic Advisement

Academic advisement is administered by the academic units. Each unit employs a selected group of trained advisers. They operate under the supervision of a chief adviser who is responsible to the dean of the academic unit.

The University accepts the importance of the academic advisement function. Insistence on receipt of transcripts and ACT scores prior to admission serves not only to determine admission but later provides suitable educational information to the advisers upon which decisions can be made relative to the proper courses to advise the students to take. On the basis of this information the advisers can make intelligent decisions relative to students who should receive advanced standing in courses or who should be urged to take proficiency examinations in courses about which they appear to be already well informed.

Registration

Registration for any session of the University is contingent upon being eligible for registration. Thus advance registrations, including the payment of tuition and fees, are considered to be invalid if the students are later declared to be ineligible to register due to scholastic reasons. Students may also be considered ineligible to register because of financial or disciplinary reasons if this is certified to the Office of Admissions and Records by the appropriate University office.

Detailed information about the dates and procedures for advisement and registration appears in each semester's Schedule of Classes, which is available from the Office of Admissions and Records.

Students should be familiar with the following general points about registration.

1. Registration for a semester is conducted under a registration calendar consisting of three distinct periods. Advanced registration occurs during the last eight weeks of the preceding term, final registration immediately preceding the start of classes and late registration during the first week of classes.

2. Currently enrolled students are expected to register during the advanced registration period. New freshmen, transfer, and re-entry students are provided an opportunity to advance register on specific new student registration days during the advanced registration periods.

3. Students who are unable to advance register may register prior to the beginning of classes during the final registration period.

4. Students initiate registration with the advisement center of their colleges or schools.

5. The course request forms and program change forms must be processed through the Registration Center in the Office of Admissions and Records.

6. Mere attendance does not constitute registration in a class, nor will attendance in a class for which a student is not registered be a basis for asking that a program change be approved permitting registration in that class. Students should complete the registration process before classes begin.

7. Enrollment changes to classes can only be made through the processing of an official program change form.

8. Tuition and fees are payable in advance or by installments and no student shall be enrolled in any educational unit until at least the first installment of tuition and fees have been paid or officially deferred.

9. Students may not drop a course merely by stopping attendance. (See the Withdrawal from Courses and from the University section of this chapter.)

10. There is a terminal date near the end of each semester or session after which withdrawal from the University cannot be processed prior to the assignment of grades. As a result withdrawal will be allowed only in unusual circumstances. This date is usually one week before final examinations start. The specific date appears in each appropriate Schedule of Classes.

Tuition and Fees and Other Financial Information

It is difficult to indicate the specific cost of attending the University because of the differences in personal spending habits. However, the following information may be helpful.

Tuition and Fees

Tuition and fees charged students are established by the Board of Trustees and are subject to change whenever conditions necessitate. All assessments are on a per-hour basis, with 12 hours considered full time. Students will be assessed the following tuition and fees each term:

ON-CAMPUS UNDERGRADUATE TUITION AND FEE SCHEDULES

Semester Hours Enrolled	Illinois Residents Tuition	Illinois Residents Student Fees	Illinois Residents Total	Non-Illinois Residents Tuition	Non-Illinois Residents Student Fees	Non-Illinois Residents Total
1	$ 39.75	$ 95.08	$134.83	$ 119.25	$ 95.08	$ 214.33
2	79.50	105.90	185.40	238.50	105.90	344.40
3	119.25	118.99	238.24	357.75	118.99	476.74
4	159.00	132.24	291.24	477.00	132.24	609.24
5	198.75	145.47	344.22	596.25	145.47	741.72
6	238.50	158.73	397.23	715.50	158.73	874.23
7	278.25	171.98	450.23	834.75	171.98	1,006.73
8	318.00	185.21	503.21	954.00	185.21	1,139.21
9	357.75	198.46	556.21	1,073.25	198.46	1,271.71
10	397.50	211.71	609.21	1,192.50	211.71	1,404.21
11	437.25	224.95	662.20	1,311.75	224.95	1,536.70
12 or more	477.00	238.20	715.20	1,431.00	238.20	1,669.20

STUDENT FEE DISTRIBUTION

Semester Hours Enrolled	STS Grant (1)	Student Attorney (2)	Student Center (3)	Student Activity (4)	REC (5)	Athletic (6)	Medical (7)	RBF (8)
1	$2.25	$2.00	$ 5.00	$ .71	$ 2.00	$ 3.17	$75.00	4.95
2	2.25	2.00	5.00	1.42	4.00	6.33	75.00	9.90
3	2.25	2.00	7.25	2.14	6.00	9.50	75.00	14.85
4	2.25	2.00	9.67	2.85	8.00	12.67	75.00	19.80
5	2.25	2.00	12.08	3.56	10.00	15.83	75.00	24.75
6	2.25	2.00	14.50	4.28	12.00	19.00	75.00	29.70
7	2.25	2.00	16.92	4.99	14.00	22.17	75.00	34.65
8	2.25	2.00	19.33	5.70	16.00	25.33	75.00	39.60
9	2.25	2.00	21.75	6.41	18.00	28.50	75.00	44.55
10	2.25	2.00	24.17	7.12	20.00	31.67	75.00	49.50
11	2.25	2.00	26.58	7.84	22.00	34.83	75.00	54.45
12 or more	2.25	2.00	29.00	8.55	24.00	38.00	75.00	59.40

The fees which have been established by the Board of Trustees are payable by all students unless they are specifically exempted by the Board of Trustees. All fees are considered to be institutional in nature and require payment regardless of whether or not the student receives direct benefits or is in a location which permits access to such benefits.

STUDENT FEES INCLUDE

1. The Student-to-Student (STS) Grant Program Fee provides funding of a student grant program. The fee is payable by undergraduate students only. Undergraduate students who do not wish to participate in the program may seek a credit of the the fee by contacting the Office of Admissions and Records within ten days of the date of payment of fees.
2. The Student Attorney Fee provides funding for the student attorney program.
3. The Student Center Fee provides funding for operation of the Student Center.
4. The Student Activity Fee provides funding for student organizations and activities on campus.
5. The Student Recreation Fund (REC) Fee provides funding for construction and operation of physical facilities for student recreation and intramural programs.
6. The Athletic Fund Fee provides partial funding of the University's intercollegiate program for men and women.
7. The Student Medical Benefit (SMB) Fee provides funding for a comprehensive health program including on-campus out-patient care, infirmary care on campus, emergency services, hospitalization, specialty care, emergency dental care, out-of-the area benefits, and prevention programs. Students who pay the fee are entitled to full medical benefits at the Student Health Program. Students who have comparable coverage may seek a credit of the fee within the first three weeks of each semester by contacting the insurance department of the Student Health Program. Additional information may be found in Chapter 5.
8. The Revenue Bond Fee (RBF) replaces funds which were previously obtained from tuition payments and used to underwrite the funded debt operations of the Student Center and University Housing.

ADDITIONAL FEE INFORMATION

1. Students are urged to refer to the Schedule of Classes for more specific fee information.

2. A late registration fee of $15.00 shall be assessed to all students taking on-campus classes who register after the designated registration period. This fee shall be non-refundable and non-waiverable, except when it is clearly shown that the late registration was caused by faculty or administrative action. Off-campus classes and registration in courses numbered 599, 600, or 601 shall be exempt from the fee.
3. Graduate, medical, and law students are not required to pay the student-to-student grant program fee so their student fees will be $2.25 less than the amount listed in the appropriate column above.
4. Permanent full-time or permanent part-time employees may be eligible for waiver of tuition and waiver of a portion of the student fees. Approval by the department head and the director of the Personnel Office must be given prior to enrolling for courses. Employees who are approved are required to pay the Student Center, and Student-to-Student Grant fees as listed in the table above.
5. Other charges which students may incur are those for departmental field trips, library fines, and excess breakage. Also, students taking a course involving use of materials, as distinct from equipment, will ordinarily pay for such materials.
6. Students registering for courses on an audit basis pay the same tuition and fees as though they were registering for the courses for credit.
7. Out-of-state students will find the official University regulations governing determination of residency status for assessment of tuition later in Chapter 2.
8. Medical students are not required to pay Student-to-Student Grant Program Fee. In addition, medical students in Springfield are not required to pay Student Center, Athletic Fee, Student Recreation or the Revenue Bond Fee and pay $40.00 of the Student Medical Benefit Fee.
9. Students enrolled in public service courses pay only tuition and $3.00 per hour in fees. The fees are divided equally between Student Center and Student Medical Benefit Fees. Students who combine enrollment in public service courses and regular on-campus courses pay tuition and fees for the combined total of hours enrolled.
10. Students enrolling in off-campus non-contractual courses pay tuition only. Students who combine enrollment in on- and off-campus course pay tuition only for hours off campus plus tuition and fees for hours enrolled on campus.
11. Tuition and program delivery charges for students enrolled in off-campus programs for the military are established in accordance with Board of Trustees policies relating to such charges for Southern Illinois University at Carbondale cost recovery programs and are not affected by the residency status of the student.
12. In addition to the above fees, there is a graduation fee. For further information contact the Office of Admissions and Records.

PAYMENT AND REFUNDING OF TUITION AND FEES

Tuition and fees are payable each semester during the academic year. Students will receive monthly statements of account through the University billing/receivable system. The statement lists all tuition and fees assessed, charges for University housing, charges for various other services, credits applied to the student's account from financial aid sources and cash payments. It shows the balance of these charges and credits as an amount owed by the student or an amount owed to the student. The statement also will show amounts which are past due, amounts which are currently due during the billing period, and amounts which will be due in the future. Payment may be made either by mail or in person at the Bursar's Office by the deadline date in accordance with instructions printed on the statement of account.

The top portion of the statement should accompany the payment. The bottom portion of the statement should be retained by students for their records. Prepayments of tuition and fees prior to detailed charges are not encouraged; however, early payments will be generally credited to the students' account and will be applied to charges made to that account.

The statements will be mailed to the student's mailing address after the fifteenth of each month. It is the student's responsibility to maintain an accurate mailing address to which a statement of account can be mailed. Failure to receive a bill does not relieve students of the responsibility for prompt payment of currently due amounts. See additional information under the heading Mailing and Home Addresses.

No student shall be enrolled until the student has either paid tuition and fees in full or has paid the initial installment or has had a cancellation waiver. Other amounts due from students at the time the initial installment payment of tuition/fees is due must also be paid or students will not be allowed to enroll. Students who fail to pay the first installment and all other past due charges or who fail to obtain a waiver of cancellation will have their registrations cancelled and will be denied privileges available to a student regularly enrolled in the University. Students with cancelled registrations who want to be enrolled at Southern Illinois University at Carbondale must reregister. They will be subject to payment in full or the installment plan in effect at the time of their reregistration. They may also be subject to a late registration fee.

A service charge of one and one-half percent per month will be assessed on all accounts which are delinquent. To avoid the service charge, students must pay the minimum amount due printed on the statement prior to the next billing date. More detailed information is in the *Schedule of Classes* published each semester.

Students who process a program change which places them in a different tuition and fee category than the one for which they originally registered will be billed additional tuition and fees when appropriate. If the change places them in a smaller tuition and fee category and if they processed the program change within the first three weeks of the semester, they will receive a refund provided their account carries no other charges.

Students who officially withdraw from school by the specific withdrawal deadline will receive a credit to their university account. Students with credit balances in their account will receive a refund by mail approximately three weeks from the date of withdrawal.

Installment Payment Plans. There are several installment payment plans and eligibility will depend on where students attend class and when they register. The University reserves the right to alter the payment plans offered and in some plans to require prepayment of part or of all a student's charges prior to registration. The basic criterion for eligibility in installment payments is that the student must be attending classes on the Carbondale campus or School of Medicine classes in Springfield. Payment plans for students attending classes on the Carbondale campus or School of Medicine classes allow tuition and fees to be paid in up to four installments for fall or spring semesters and up to two installments for summer term, depending on when students process their registrations. Students who option for installment payment need only to pay the minimum amount due indicated on the May, July, or December statement of account by the stated deadline. There is no installment payment plan for students who only attend classes off-campus. A one and one-half percent service charge will be assessed on all minimum amounts not paid prior to the next billing. Students in military contractual programs are not subject to a service charge.

MAILING AND HOME ADDRESSES

The University maintains both mailing and a home address for students. Accurate addresses are very important for students to insure receipt of timely mail from the University.

The mailing address is used by the University to address the monthly billing and receivable system statement of account, refunds, and other correspondence.

The home address maintained by the University is the permanent home address

of students or the address at which students will promptly receive mail when they are absent from Carbondale. Foreign students should change the home address of their native country to the United States address to which their mail may be sent whenever classes are not in session. Married students should change their home address to the same address which they use as their mailing address.

Grade reports and advanced registered student schedules are mailed to the students home address in August, December, and May. Also December statements of account are mailed to the students' home address.

DEADLINES FOR WITHDRAWING FROM SCHOOL TO RECEIVE A REFUND

If Classes Meet for	Deadline for Withdrawal to receive Refund
13-16 weeks	3rd week
9-12 weeks	2nd week
7 or 8 weeks	2nd week
4-6 weeks	1st week
2 or 3 weeks	1st week
less than 2 weeks	2nd day

No refunding of tuition and fees is made for a withdrawal occurring after the deadlines, except as described in the next paragraph.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). Students will be refunded full tuition and fees paid if they enter military service during the first five weeks of school. If students withdraw during the sixth through tenth weeks of school, they will be refunded half of the paid tuition and fees, and they will receive one-half credit without letter grades for the courses in which they were receiving a passing grade at the time of withdrawal. When the withdrawal occurs after the tenth week, students will receive no refund, but will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits students must remain in school to within ten days of their military reporting date.

DEFERMENT OF TUITION AND FEES

When a student's financial aid has been delayed, or the funds which a student anticipates using to pay tuition and fees are unavailable by the regular due date for tuition and fee payment, the student may apply for an extension of the payment deadline date through a process called waiver of cancellation. Cancellation waivers are available to students who can demonstrate that they meet minimal eligibility criteria and can provide written verification of an ability to pay. Information on cancellation waivers is publicized each semester in the Office of Admissions and Records, the Bursar's Office, the Student Work and Financial Assistance Office, and the *Daily Egyptian.* Eligibility criteria and procedural guidelines may vary from term to term and year to year. Students are advised to seek out the accurate information rather than assume they qualify.

Students applying for a cancellation waiver must first complete registration. Written verification from the source of funds to be used to pay tuition and fees must be presented in person to the Student Work and Financial Assistance Office for those students with approved scholarships, grants, or loans, or any combination of these. Instances of exceptional need will be referred to a financial aid officer when the source of funds is other than those identified above. Additional information on cancellation waivers is available in the Student Work and Financial Assistance Office. Phone or mail requests for deferments will not be accepted.

Grading, Scholastic Regulations, and Credit

Grading System

GRADE SYMBOL	DEFINITION	GRADE POINTS PER HOUR
A,	Excellent	4
B,	Good	3
C,	Satisfactory	2
D,	Poor	1
F,	Failure	0
P,	Pass. Used only in Pass/Fail system. See Grading System Explanation below.	
W,	Authorized withdrawal. See Grading System Explanation below.	
INC,	Incomplete. See Grading System Explanation below.	
AU,	Audit. No grade or credit earned. See Grading System Explanation below.	

GRADING SYSTEM EXPLANATION

The grades of *A, B, C, D,* and *F,* are included in determining student grade point averages.

An *INC* is assigned when, for reasons beyond their control, students *engaged in passing work* are unable to complete all class assignments. An *INC* must be changed to a completed grade within a time period designated by the instructor but not to exceed one year from the close of the term in which the course was taken, *or graduation,* whichever occurs first. Should the student fail to complete the course within the time period designated, not to exceed one year, or graduation, whichever occurs first, the incomplete will be converted to a grade of *F* and the grade will be computed in the student's grade point average. Students should not re-register for courses in which an *INC* has been assigned with the intent of changing the *INC* grade. Re-registration will not prevent the *INC* from being changed to an *F.*

The Pass/Fail Grading System is explained further under a separate section below. For *mandatory* Pass/Fail courses, the grades of *P,* when the student's work is satisfactory, or *F,* when the student's work is unsatisfactory, may be recorded. For a *P,* the hours apply toward graduation but the grade does not affect the grade point average. For an *F,* the hours do not apply toward graduation but the grade does count in the grade point average. For *elective* Pass/Fail courses, the instructor of the class will assign regular letter grades of *A, B, C, D, F,* or may assign an Incomplete if the work is not finished. The grade of *A* will be recorded as an *A* and will be counted in the grade point average. Grades of *B, C,* or *D* will be recorded as *P* and will not be counted in the grade point average although the hours will be counted toward graduation. The grade of *F* will be counted in the grade point average but the hours will not apply toward graduation. If a student receives an *INC* in a Pass/Fail course, the same regulations apply for completion of the work as apply for all other grades of *INC,* as explained above. Students enrolling in *elective* Pass/Fail courses must designate their intent to enroll on a Pass/Fail basis at the time of registration or prior to the end of the third week of a sixteen-week semester and prior to the end of the second week of an eight-week summer session. An equivalent prorated amount of time would be allowed for courses of shorter duration. Students registering for short courses must register for Pass/Fail prior to the beginning of those classes

Students enrolling for an *Audit* must designate their intent to enroll on an *Audit* basis at the time of registration or prior to the end of the third week of a sixteen-

week semester and prior to the end of the second week of an eight-week summer session. An equivalent prorated amount of time would be allowed for courses of shorter duration. Students registering for short courses must register for *Audit* prior to the beginning of those classes. Students registering for a course on an *Audit* basis receive no letter grade and no credit. Auditors' Course Request Forms must be marked accordingly, and they pay the same fees as though they were registering for credit. They are expected to attend regularly and to determine from the instructor the amount of work expected of them. If auditing students do not attend regularly, the instructor may determine that the student should not have the audited course placed on the academic record maintained in the Office of Admissions and Records.

WITHDRAWAL FROM COURSES AND FROM THE UNIVERSITY

Students who officially register for a session may not withdraw merely by the stopping of attendance. They need to process an official withdrawal form. Outlined below are the procedures to be followed by students when withdrawing from courses and when withdrawing from the University (all courses for which registered).

If Classes Meet for	Deadline for Withdrawal to Receive Refund	Deadline to Withdraw*
13-16 weeks	3rd week	8th week
9-12 weeks	2nd week	6th week
7 or 8 weeks	2nd week	4th week
4-6 weeks	1st week	3rd week
2 or 3 weeks	1st week	1st week
less than 2 weeks	2nd day	2nd day

*In each instance, one day beyond the time listed will be allowed for processing of the withdrawal. Also, refer to the section on withdrawal from the University for a special provision concerning withdrawal from school beyond the 8th week.

Course Withdrawals. Students officially withdraw from courses through the program change process. This process starts with the academic adviser and is completed at the Registration Center. Official course withdrawals during the first three weeks of the semester result in no entry being made on the student's record. Periods prior to withdrawal deadlines for shorter sessions are correspondingly shorter. Unless a student has processed an authorized withdrawal from a course by the deadline in the schedule above, the student will not be allowed to withdraw from the course. It is the student's responsibility to ensure that the withdrawal process is officially completed. It is probable that a student who does not withdraw by the deadlines, but stops attending during the second half of the semester, will receive a grade of *F*.

Withdrawal from the University. The dean of the student's academic unit may authorize a complete withdrawal from the University at any time during the semester prior to the assignment of grades. Students who withdraw from all classes will have a statement of withdrawal from the University and the week of withdrawal entered on their records.

Students who find it necessary to withdraw from the University after school has started and who are on campus should contact the Office of Student Life to initiate the withdrawal process. Approval to withdraw should then be obtained from the student's academic dean. If they are unable to come to campus, they may write the Office of Student Life asking that a withdrawal be processed through the academic dean.

Students who advance register, and pay their tuition and fees, and who then find they cannot attend school must process an official withdrawal the same as do those who withdraw after classes begin. In this case the process is the same as outlined in the paragraph above.

PASS/FAIL GRADING SYSTEM

The purpose of the Pass/Fail grading system is to encourage students to broaden their education by undertaking intellectual exploration in elective courses outside their area of specialization without having to engage in grade competition with students specializing in those courses.

The Pass/Fail grading system for undergraduate students in good academic standing is governed by the conditions listed below:

1. There are two types of Pass/Fail courses: *mandatory* Pass/Fail courses, in which all students will receive either a *P* or an *F;* and *elective* Pass/Fail courses, in which students can elect either the traditional grading system or the Pass/Fail option.
2. No course is available under the Pass/Fail option without prior designation by the department or program in which the course is offered.
3. The Pass/Fail grade is *mandatory* in courses in which, in the judgment of the department or program, the traditional grading system is inappropriate.
4. The Pass/Fail grade is *mandatory* for all proficiency examinations.
5. The number of *elective* Pass/Fail credits is limited to sixteen semester hours overall, and to six semester hours in any General Education area.
6. Formal permission of the major department or program is required before students are permitted to elect Pass/Fail for a major or minor requirement.
7. Students who earn an *A* in an *elective* Pass/Fail course will have the *A* recorded and counted in the grade point average.
8. The grade of *P* is not computed in the grade point average but the hours earned apply toward graduation. The grade of *F* is computed in the grade point average as a failure but no hours of credit are earned.
9. Instructors who teach *elective* Pass/Fail courses are not informed which students are taking these courses on a Pass/Fail basis.
10. A grade of *D* or higher is required for students to receive a *P.*
11. Students enrolling in elective Pass/Fail courses must designate their intent to enroll on a Pass/Fail basis at the time of registration or prior to the end of the third week of a sixteen week semester and prior to the end of the second week of an eight-week summer session. An equivalent prorated amount of time would be allowed for courses of shorter duration.
12. Only the grades of *A* or *F* earned in Pass/Fail courses are to be included in computing grade point averages for Dean's List.

CHANGING OF GRADES

Grades given at the end of a course are final and may not be changed by additional work or submitting additional materials. When work is completed for a course in which an *INC* grade has been given, instructors notify the Office of Admission and Records of that fact, along with the final grade to be given, by completing a Grade Change Card.

Occasionally, students may wish to question grades given, either for accuracy or for removal of grades in situations when they were unable to perform some required step for reasons beyond their control. Only the assigned instructor for a course has the authority to change a grade except in the instance when the instructor is no longer employed by Southern Illinois University at Carbondale. Extenuating circumstances which transcend faculty judgment of the instructor may be appealed through procedures established by the instructor's school or college. Matters related to faculty judgment in grading may not be appealed. Any

change of grade, except for changing an *INC* to a final grade within the time period designated, must be signed not only by the instructor but also by the departmental chairperson and the dean of the academic unit.

Scholastic Standing

The matter of scholastic standing is quite often of importance to students both while in school and later when they present a transcript of their educational record in support of their application for employment or additional schooling.

At the end of each semester or session of attendance a grade report is prepared for each student showing, in addition to the grades earned that semester or session, the scholastic standing and the grade point average for that semester or session and for the overall record at Southern Illinois University at Carbondale. It is important that students understand the University's system for computing grade point averages and the various grade point average requirements.

Transferred grades are not to be used in determining students' calculated grade point averages, except that transfer students who are admitted on probationary status will be required to earn a 2.0 average semester by semester until a total of 12 semester hours has been earned, before they can be removed from probation.

The significance of the above should be clearly understood by transfer students when studying the general baccalaureate degree requirements. A 2.00 (*C*) average is required for the work taken at this University.

In computing students' grade point averages all grades of *A, B, C, D,* and *F* are included in determining the number of *calculated* hours. Each hour of these grades (1 hour of *A* is worth 4 grade points) is given its numerical grade points, and the total number of calculated hours is then divided into the total number of grade points to determine the student's grade point average.

Effective with the 1971 summer quarter all earned grades carrying grade point values are considered when computing students' grade point averages, including each earned grade in a repeated course that is taken during the 1971 summer quarter and thereafter. When computing averages through 1971 spring quarter the policy contained in the 1970-71 Undergraduate Catalog is followed.

Transfer from One School or College to Another. Students with less than a *C* (2.0) grade point average who desire to change from one school or college to another will be admitted to the new academic unit only if approved by the dean of that unit.

Scholastic Probation and Suspension System

Students are expected to make satisfactory progress toward a degree, certificate or other approved objective. To ensure that students are making progress their records are checked against the regulations below.

SCHOLASTIC PROBATION

When a student's semester average and the cumulative Southern Illinois University at Carbondale average fall below a *C* average (2.0), the student will be placed on scholastic probation. A student on scholastic probation may continue enrollment at Southern Illinois University at Carbondale provided the student does not accumulate more than six negative points. See Positive and Negative Grade Points below for an explanation of how positive and negative points are calculated. The student with more than six negative points will not be suspended so long as the term average is *C* (2.0) or above. A student will remain in the category of scholastic probation until the cumulative Southern Illinois University at Carbondale average is *C* (2.0) or higher.

While on scholastic probation students may not enroll for more than 14 hours per semester unless approved to do so by the dean of their academic unit.

Students employed full time may not register for more than eight hours without approval of the head of their academic unit. Other limitations may be established by the academic unit within which the students are enrolled. Students enrolled in programs for the military or students enrolled in programs with a weekend or evening format are not restricted to the eight hour limit while on probation.

CONDITIONAL STATUS

Students admitted on condition are on scholastic probation for the term admitted. In addition, they must enroll for a minimum of twelve semester hours and complete ten semester hours of graded work (*A, B, C, D, F*). Students admitted on condition who meet the hour requirements will be placed in good standing when they earn a *C* (2.0) average or higher. They will remain on scholastic probation if they earn less than a *C* average but six or fewer negative points. Students who earn more than six negative points will be scholastically suspended.

TRANSFER STUDENTS ADMITTED ON PROBATION

Transfer students admitted on scholastic probation will remain in that status until they have earned a minimum of 12 semester hours of credit with at least a *C* average at Southern Illinois University at Carbondale. If they earn below a *C* for any session while on scholastic probation, they will be placed on scholastic suspension.

SCHOLASTIC SUSPENSION

Students will be scholastically suspended from Southern Illinois University at Carbondale if they fail to meet the requirements of their conditional or probational status. Students placed on Scholastic Suspension may seek reinstatement after a minimum of two semesters' interruption but must furnish tangible evidence that additional education can be successfully undertaken. Some academic units have scholastic requirements in addition to the overall University requirements listed here. Students must learn and comply with the University requirements as well as those requirements applying to individual schools and colleges.

POSITIVE AND NEGATIVE GRADE POINTS

Positive and negative grade points are assigned to grades above or below a *C*. There are two methods to figure points depending upon the information which is available.

Grade Slip Available. The grade slip printed at the end of each semester lists the hours used in calculating the average and the grade points earned. Since *C* has a value of two grade points on a 4 point scale, grade points equalling a *C* average are exactly twice the number of hours calculated. All grade points over that amount are positive grade points. All grade points under the amount are negative grade points.

For example:

Hours Calculated	*Grade Points*		*Grade Point Average*
60	120	=	*(C)* 2.0

Twice the hours calculated equals 120 grade points. This is a *C* (2.0) average. A student with 60 calculated hours and only 115 grade points would have five negative points (1.92 average). A student with 30 calculated hours and 55 grade points would have five negative points (1.83) average.

Grades and Hours of Credit Available. Whenever all grades and hours of credit are known and grade points have not been assigned as on the grade slip, a simple method is to assign positive and negative points as follows:

A = 2 positive points per hour
B = 1 positive point per hour
C = 0
D = 1 negative point per hour
F = 2 negative points per hour
For example:

3 hours of A	× 2 positive points	= 6 positive points
3 hours of B	× 1 positive point	= 3 positive points
3 hours of C	× 0 points	= 0
2 hours of D	× 1 negative point	= 2 negative points
4 hours of F	× 2 negative points	= 8 negative points

The ten negative points are balanced by only nine positive points so the sample has one negative point.

Negative points are also used to easily determine exactly what grades must be earned to raise the average to C. For example, a student with eight negative points could raise the average to C by earning four hours of A grade or eight hours of B grade, assuming all other grades earned are C.

Credit

UNIT OF CREDIT

Southern Illinois University at Carbondale is on the early semester calendar. All references to hours of credit in this catalog are to semester hours unless otherwise specified. One semester hour of credit is equivalent to one and one-half quarter hours. One semester hour of credit represents the work done by a student in a lecture course attended fifty minutes per week for one semester and, in the case of laboratory and activity courses, the stated additional time.

CLASS STANDING

Southern Illinois University at Carbondale requires students to earn at least 120 semester hours of acceptable credit in order to receive a baccalaureate degree. For academic classification purposes a freshman is a student who has completed fewer than 26 hours; a sophomore, from 26 through 55; a junior, from 56 through 85; and a senior 86 or more.

ACADEMIC LOAD

The University considers 12 hours as the minimum number to constitute fulltime attendance. This is the figure used for enrollment reporting purposes, by the Illinois State Scholarship Commission, and for Public Law 358 on the undergraduate level. Students attending school under some type of scholarship or assistance program that requires them to be enrolled as full-time students should check with the University office administering the program on this point. Further information on Public Law 358 is available at the Student Work and Financial Assistance Office.

Academic load guidelines are as follows:

LOAD	REGULAR SEMESTER	8-WEEK SUMMER SESSION
Minimum load for full time	12	6
Average load	15-16	7-8
Maximum load without dean's approval	18	9
Maximum load[1]	21	11

[1] This maximum may be exceeded by very special action of the respective academic dean, and rarely more than once in the student's degree program.

Students on scholastic probation may not take more than 14 hours without approval of the dean of their academic unit. Students employed full-time may not register for more than eight hours.

EXTENSION (OFF-CAMPUS) AND CORRESPONDENCE CREDIT

The University accepts credit earned through extension, off-campus, or correspondence programs toward the bachelor's degree. Not more than 30 semester hours may be taken in correspondence work.

Correspondence work is accepted when taken from institutions which are regionally accredited if the grade is of *C* quality or better. Southern Illinois University at Carbondale operates an individualized learning program similar to correspondence programs in which students may earn academic credit. More information about individualized learning is in chapter 3 under *Division of Continuing Education.*

The University offers off-campus courses whenever (1) it is apparent there is a need and potential enrollment to justify scheduling, (2) it is possible to obtain a faculty member to instruct the class, and (3) adequate laboratory and library facilities are available.

Persons may enroll for off-campus work on an audit basis provided facilities are available. They must receive permission of the instructor to do so, and they must pay the same tuition as though they were registering for credit.

Further information may be obtained from the Division of Continuing Education.

CREDIT FOR MILITARY EXPERIENCE

Students who have served one year or more of active duty and who have received an honorable discharge may receive two hours of aerospace studies credit, two hours of physical education credit, and two hours of health education credit. Service of six months to one year may result in two hours of freshman aerospace studies credit; less than six months of active service allows no college credit.

Credit will be accepted for DANTES subject standardized courses within the limitations enforced for extension and correspondence work. No credit is allowed for college-level GED tests. In evaluating credit possibilities based upon formal service-school training programs, the recommendations of the American Council on Education as set forth in the U.S. Government bulletin, *Guide to the Evaluation of Educational Experiences in the Armed Forces,* are followed.

In order to receive credit for military service, veterans must present a copy of discharge or separation papers to the Office of Admissions and Records.

Graduation Procedures

The academic requirements for the various baccalaureate degrees are listed in Chapter 3. Presented here are the procedures students expecting to graduate must follow.

Graduation ceremonies are held each year at the end of the spring semester and the summer session. Degree candidates must apply for graduation with the Office of Admissions and Records by not later than the end of the first week of the semester in attendance before the expected graduation date. Candidates who plan to complete requirements at the end of the fall semester should apply for graduation during the first week of the fall semester. Although there is no ceremony at that time, degree candidates who complete requirements will have that fact indicated on their academic records. Application forms are available in the Office of Admissions and Records and may be obtained by mail by writing that office.

A $10 graduation fee is established for all persons receiving degrees. The fee is

payable at the time of application. The fee does not cover the rental fee for the cap and gown or the cost of the invitations. Both of these items are ordered through the University Book Store in the Student Center. Questions regarding the cap and gown and the invitations should be referred to the University Book Store.

In addition to completing the steps for application for graduation, students are responsible for determining that they are meeting all graduation requirements and have no outstanding financial obligation to the University. To assure that students are meeting the academic requirements, each academic unit provides a graduation check-up service through its academic advisement process, through which the satisfying of academic requirements can be verified. Even though the University does provide an academic check on graduating students, this is done primarily to be sure that it is graduating students who have met the requirements. The advising of individual students as to their progress is a service provided them and does not relieve students of their responsibility to make certain they are meeting the requirements. Students should check with their academic advisers as to the procedures they should follow in this matter as they approach graduation.

Graduating students who have outstanding financial obligations or delinquent accounts with the University will not receive either the diploma or transcripts until their accounts are paid.

Attendance at commencement is not compulsory. If you do not plan to attend, notification must be sent to the Office of Admissions and Records. This information is needed for seating arrangements and for mailing purposes.

The University has a Graduation Appeals Committee whose function it is to hear student's petitions to be permitted to graduate even though they have not satisfied all University graduation requirements. The committee hears only those cases involving University requirements for a baccalaureate degree. Appeal relative to a major or academic unit requirement is through the appropriate administrative official. Ordinarily, the Graduation Appeals Committee will give consideration to an appeal only if there is tangible evidence that the matter at issue is of an unusual nature and that it has resulted due to conditions beyond control of the student. Appeal is initiated through the Office of Admissions and Records.

University Recognition of High Scholastic Achievement

Dean's List. At the end of each semester, a dean's list is prepared. The criteria for inclusion on the dean's list is established by each of the academic units. To be recognized as being on the dean's list, the student must have been in attendance full-time (12 semester hours or more) and must have earned the average for the semester which has been specified by the academic unit. If the student has met the criteria established, a notation will appear on the grade slip at the end of the semester. The dean's list is recognition for a particular semester. It does not take into consideration the student's complete record.

University Honors Program. The University Honors program is explained in this chapter. Successful participants in all-campus honors programs which require maintenance of appropriate minimal scholastic standards, such as the University Honors program, receive recognition on the academic record at the time the degree is recorded and on the diploma.

Departmental Honors. Honors courses, individual honors work, and honors cur-

ricula, all designed to serve the student with high scholastic potential, are offered by departments in the School of Agriculture, the College of Human Resources, the College of Liberal Arts, and the College of Science. A departmental or academic unit honors program consists of no fewer than six nor more than fourteen semester hours in research or independent study which is counted toward the student's major. Some honors programs require a comprehensive examination at the end of the junior year and again at the end of the senior year. Grades may be deferred at the end of the first semester, but not from one school year to the next. Successful completion of a departmental or academic unit honors program is indicated on the academic record at the time the degree is recorded and on the diploma, thus, departmental honors in economics.

Scholastic Honors Day. Each spring a Scholastic Honors Day convocation is held to honor students exhibiting high scholastic achievement. All students who have maintained a cumulative grade point average of 3.50 or higher, and who have been full-time students during the entire academic year, are honored at this time. A 3.50 grade point average is required for all work taken at Southern Illinois University at Carbondale, and in the case of transfer students, the cumulative average must be at least 3.50, also. Each academic unit has its own convocation and each student is recognized individually on this day.

A variety of professional, departmental, and fraternal honorary organizations offer recognition and membership based upon scholastic achievement. Election or selection to most of these organizations is noted at the Scholastic Honors Day ceremonies. The following are examples of some of these organizations: Alpha Epsilon Rho, Alpha Lambda Delta, Beta Alpha Psi, Beta Gamma Sigma, Kappa Omicron Phi, Pi Mu Epsilon, Pi Omega Pi, Tau Beta Pi, the Liberal Arts and Sciences Honor Society, and the Honor Society of Phi Kappa Phi. Selection to membership in these organizations is not reflected on the academic record or diploma.

University Honors/Departmental Honors Recognition at the Time of Graduation. Graduating students with scholastic averages of 3.90 or higher receive University highest honors; those with 3.75-3.89 receive University high honors; and those with 3.50-3.75 receive University honors. These averages apply to all work at Southern Illinois University at Carbondale, and in the case of transfer students, the averages apply to the cumulative record, also. Whichever of the University Honors apply, plus graduation with departmental honors, are recorded on the student's academic record at the time the degree is recorded and on the diploma.

Program Flexibility for the Student

Southern Illinois University at Carbondale offers students a wide variety of programs on all higher educational levels. Chapter 4 lists specialized programs available on the associate and baccalaureate levels. In addition, the University gives constant attention to methods whereby it might better serve present day educational needs. Described below are opportunities provided students to either (1) earn credit through means other than the traditional classroom method or (2) develop programs better suited to individual student needs than are the already established programs described in Chapter 4. While greater flexibility is the goal, the University exercises appropriate supervision to ensure the flexibility is accompanied by educational soundness.

Credit by Means other than Classroom Attendance

Several methods are provided for students to earn credit by means other than the

traditional classroom method. The methods currently available are described below.

HIGH SCHOOL ADVANCED PLACEMENT PROGRAM

Through the High School Advanced Placement Program high school students who are qualified through registration in an advanced placement course in their high schools or through other special educational experiences may apply for advanced placement and college credit through the Advanced Placement Program of the College Board. To receive credit, students must earn a grade of 3, 4, or 5.

Ordinarily, the maximum credit granted through advanced placement examinations is fifteen hours. It is nonresident credit, does not carry a grade, and is not used in computing the students' averages. Credit granted at another accredited college or university under this plan is transferable to this University up to a maximum of fifteen hours. Students may appeal to academic deans to be granted more than fifteen hours.

Advanced classes which qualify for this purpose are offered in many high schools in specific subjects such as English composition, foreign languages, history, biology, chemistry, mathematics, and physics. A national examination is given in each subject with the examinations administered through the Educational Testing Service. The examinations are prepared by a national committee of high school and college teachers and are intended to measure the achievement of the student and determine at what point the student should begin college work in the subject.

The credit to be granted at Southern Illinois University at Carbondale is determined by the appropriate department. The following is a listing of courses for which a student may currently receive credit:

1. Physics: credit to be determined in consultation with the chairperson of the Department of Physics.
2. Chemistry: Chemistry 222 a,b (eight semester hours.)
3. Biology: GE-A 115 (three semester hours)
4. American History: GE-B 301 and History 300 (six semester hours)
5. European History: History 200 (three semester hours)
6. English: GE-D 101 (three semester hours)
7. Foreign languages: credit to be determined in consultation with the chairperson of the Department of Foreign Languages and Literatures.
8. Mathematics: Calculus AB: Mathematics 150 (four semester hours)
   Calculus BC: Mathematics 150 and 250 (eight semester hours).
9. Music: credit to be determined in consultation with the director of the School of Music.
10. Art: credit to be determined in consultation with the director of the School of Art.

Further information about the advanced placement program may be obtained from the appropriate regional office of the College Board or by writing The College Board, 888 Seventh Avenue, New York, New York 10019.

COLLEGE LEVEL EXAMINATION PROGRAM

Through the General Examinations of the College Level Examination Program (CLEP), students may apply for credit which will substitute for General Education courses. With a score of 520 or higher on the appropriate examination, it is possible for students to receive six semester hours of credit in each of the three fields of natural sciences, social sciences and history, and humanities.

A score of 580 or higher is required to pass the mathematics test. With this score students may earn four hours of credit which will fulfill the General Education mathematics requirement.

With a score of 650 or higher on the CLEP English examination, students are

permitted to take GE-D 120, Freshman Honors Composition (three semester hours), instead of GE-D 101 and GE-D 117 (five semester hours). A student who scores 675 or above on the CLEP English examination will receive five semester hours credit (three semester hours GE-D 101 and two semester hours GE-D 117). A score of 650 to 674 entitles the student to receive (a) advanced placement in GE-D 120, Freshman Honors Composition, and (b) five semester hours credit upon the satisfactory completion of GE-D 120 with a grade of *C* or higher (three semester hours GE-D 120 and two semester hours GE-D 117).

If, prior to taking the CLEP examination, students have received a grade or audit in college level work in any discipline included in the CLEP exam or if they have enrolled in such a course, they shall be ineligible for credit. Exceptions: a) An exception to this rule is made in the case of students who enroll in the Early Admission or ALPHA programs. Such students receive university credit for courses taken during the early admission or ALPHA experience and for the CLEP credit earned. b) Since a review of the content of the CLEP examinations in social sciences and in humanities demonstrates Black American history is not included as a part of the examinations, an exception is made to the definition of the content of the CLEP in social sciences and humanities to exclude Black American history. This means that a student is eligible to be granted credit in social sciences or in humanities if the appropriate score is received on the CLEP examination, even though the student may already have been granted credit in Black American history.

The science exam includes botany, microbiology, physiology, zoology, chemistry, physics, earth science, geography, and all General Education Area A courses. The social sciences and history exam includes western civilization, American history, Afro-Asian civilization, world history, political science, economics, anthropology, sociology, social psychology, social studies, and all General Education Area B courses. The humanities exam includes literature — poetry, fiction, drama, non-fiction, creative writing; films and performing arts; art — art appreciation, art history, architecture (past and present); music — classical, modern or jazz; humanities — all general humanities courses; all General Education Area C courses; philosophy — aesthetics, ethics, general survey. The mathematics test includes all college-level mathematics.

Students may be exempted from all General Education requirements if they (1) pass all five CLEP General Examinations before entering the University with these minimum scores: natural sciences, social sciences, and humanities, 520; English, 675; and mathematics, 580, and (2) become members of the University Honors Program. No retroactive extension of the CLEP privilege will be allowed.

For further information, students should consult with their academic adviser.

CLEP examinations should be taken at one of the national testing centers and the results sent to the local CLEP coordinator. The results are then forwarded to the Office of Admissions and Records for evaluation.

PROFICIENCY EXAMINATIONS

Through its proficiency examination program the University recognizes the importance of providing encouragement for academically talented students. Such students are permitted to make application to demonstrate the mastery of certain courses through proficiency examinations. Application forms are available at the departmental offices.

The following general rules govern the proficiency examinations for undergraduate credit.

1. Students who believe they are qualified to take a proficiency examination should check with the department offering the course to determine their eligibility to do so; students scoring in the top ten percent of ACT are particularly encouraged to avail themselves of this opportunity.
2. Credit not to exceed thirty hours (fifteen hours toward an associate degree),

including credit through the College Entrance Examination Board, Advanced Placement Program, and the College Level Examination Program may be earned through proficiency examinations. Credit will be nonresident. (A combined total of 40 hours may be earned through proficiency examinations and credit for work experience.)

3. Upon passing proficiency examinations students are granted course credit and receive *Pass* grade. Their records will show the name of the course, the hours of credit granted, and a notation "credit granted by proficiency examination." Students who fail a proficiency examination receive a *Fail* grade. This results in no penalty to the students. They will not receive credit and their records will show nothing regarding the proficiency examination. However, the proficiency examination grade report form will be filed in the students' folders for reference purposes.
4. Students may not take proficiency examinations for the same course more than one time. Neither may they take a proficiency examination in a course in which they have previously received a grade. Students who are registered for a course may not receive credit by proficiency examination for that course unless they withdraw from the course by the date during the semester which would result in no course entry appearing on the transcript. This date is the end of the third week for a regular semester course, and a correspondingly shorter period for summer session or short courses. Individual departments may require the proficiency examination to be completed in advance of this date.
5. No credit granted by proficiency examinations will be recorded until the student has earned at least 12 hours of credit of *C* grade or above in residence at Southern Illinois University at Carbondale.

CREDIT FOR WORK EXPERIENCE

Southern Illinois University at Carbondale recognizes that there might well be a number of undergraduate programs for which work experience has a meaningful relationship. It, therefore, permits those undergraduate programs to grant credit for work experience that relates to students' areas of specialization. The credit granted is to apply to the major program and is awarded only upon approval by the major departments. Credit earned by work experience is limited to 30 hours and any combination of credit for proficiency examinations and credit for work experience is limited to 40 hours. Credit granted for work experience is considered nonresident credit when granted for work that is not part of a regular instructional course. Students should consult with their major departments to see whether they approve credit for work experience.

Three-Year Baccalaureate Degree Program

It is possible for students to complete the regular four-year baccalaureate degree program in three years by utilizing proficiency examinations. The equivalent of one year of credit (30 semester hours) may be earned by this method. Students who desire to follow the three-year program should make that fact known to their academic advisers at the earliest possible date so their eligibility can be determined. A combination of programs may be employed to accumulate these 30 hours as described above in the section on Credit by Means Other than Classroom Attendance.

University Honors Program

The University Honors Program is designed to enable academically talented undergraduate students to take specially designed and challenging classes; to fulfill University and college requirements by participating in independent studies, colloquia and advanced courses; and to elect interdisciplinary, extracurricular, and cocurricular activities sponsored and administered especially for aca-

demically qualified students. Some special scholarships and internships are available to University Scholars.

Honors sponsors and University Honors staff assist qualified students in designing individualized programs tailored to needs, interests, and talents.

Membership in the University Honors Program is granted to entering freshmen who apply for membership, who graduate in the top 10% of their high school graduating class, and who also have an ACT composite score higher than the 89th percentile. The director of honors opportunities may also admit a freshman to membership in the University Honors Program on the basis of other factors, including high school experiences, letters of recommendation, or other evidence of exceptional promise. Membership may be granted to other than entering freshmen who apply for membership and who have a superior academic record such as a cumulative grade point average in the upper ten percent for students at a comparable point in their academic studies.

Members of the University Honors Program are designated as University Scholars. Retention in the University Honors Program depends upon maintaining a 3.25 cumulative grade point average in all coursework and no failing grades in honors courses. Students are kept aware of their status in the program at all times.

University Scholars should enroll in an average of one honors experience per semester and maintain normal progress toward a degree. Normal progress is defined as 24 semester hours per academic year. A minimum of 15 hours of honors work is required as a University Scholar. A University Scholar not engaged in a departmental honors program must complete an honors thesis during the senior year. Substitutions for this requirement may be arranged for a student in a major which does not allow curricular flexibility.

University Scholars may complete the General Education requirements of the University by enrolling in advanced courses in departments which offer General Education classes. Individual options may be exercised which fulfill the spirit of General Education requirements but, to challenge the University Scholar, may depart from standard University requirements. University Scholars are permitted to waive some University requirements when they have CLEP scores at an appropriate level.

Baccalaureate degrees for University Honors Program participants are awarded through the regular degree granting units.

Inquiries about the program should be addressed to the director of honors opportunities.

Technical Careers Degree Program

The University provides an opportunity to continue educational pursuits toward a baccalaureate degree for students possessing an occupational, technical, or other similarly connotated educational background. The School of Technical Careers offers a Bachelor of Science degree for such students. Programs are available to meet the needs of students in relation to their career interests and goals.

The school of Technical Careers offers educational programs at selected military bases and at other off-campus locations in addition to its on-campus programs. Persons interested in further information concerning the School of Technical Careers should contact the dean, School of Technical Careers, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. See also School of Technical Careers in Chapter 3 and Advanced Technical Studies in Chapter 4.

University Studies Degree Program

The University Studies degree program permits students an additional option toward the baccalaureate degree. The program is intended for the student seeking an individualized education and who does not wish a major on the undergraduate

level. Students may work toward either a Bachelor of Arts or Bachelor of Science degree in University Studies.

Students interested in the University Studies program should consult with the program director in General Academic Programs for more information. See the description in Chapter 4.

Special Major Program

Individual students with academic needs not met in any of the existing majors within the University may arrange a program of courses more suited to their special requirements. See the description of the Special Major in Chapter 4.

Capstone Program

The Capstone Program has been developed for students who completed a two year vocational or technical program and then change their educational goals to include the pursuit of a baccalaureate degree. The program attempts to plan an individualized course of study for each student which will allow completion of a bachelor's degree with two additional years of credit beyond an associate degree. Chapter 3 includes information about provisions of the Capstone Program, admission requirements, and those academic units and majors which participate in the Capstone Program. Not all units and majors provide the Capstone option to this kind of applicant.

Internships in Washington

Eligible students from Southern Illinois University at Carbondale can combine a work and learning experience for credit through the Washington Center for Learning Alternatives. Participants can intern in congressional offices, executive agencies, and with groups in many other areas such as the environment, consumer affairs, journalism, communications, legal affairs, labor relations, health policy, arts, education, science, public relations, urban affairs, and women's issues. Students also attend seminars taught by representatives of major governmental agencies, interest groups, and corporations.

Prior arrangements are made through major departments to receive up to twelve semester hours for fall or spring semesters and up to six semester hours for a summer session.

The Washington Center for Learning Alternatives at Southern Illinois University at Carbondale is coordinated through the office of the director of Undergraduate Academic Services.

Opportunities for Study Abroad

1. Southern Illinois University at Carbondale sponsors a number of group programs abroad including the following:

Year Abroad in Austria: Two semesters are offered in Vienna at the Padagogishe and other institutions. All courses are taught in German and require the student to have completed five semesters of college level German or equivalent with a 3.00 grade point average. Students may earn 30 to 34 semester hours of undergraduate credit in German language, literature, and civilization and in certain other areas with prior approval. Additional information may be obtained from the Department of Foreign Languages and Literatures.

Semester Abroad in London: Southern Illinois University at Carbondale is one of the institutions sponsoring one or two semsters at the London Study Center. Other participating institutions are Western Illinois University, the University of Nevada at Reno, the University of Nevada at Las Vegas, and University of Wisconsin at Milwaukee. The program provides an opportunity for students to enroll in a variety of lower and upper division courses taught by faculty from the cooperating institutions. Course offerings change each semester. Additional information may be obtained at the Office of International Education.

International Student Exchange Program: This exchange program is multilateral and involves one-year placements at 55 study sites worldwide. It is a one-for-one exchange plan under which students pay their normal tuition and fees, including room and board, and apply credit earned toward their degrees. There are study sites in Africa, Asia, Australia, the British Isles, Canada, Europe, and Latin America. Applicants must be mature, have a minimum grade point average of 3.25, and possess the appropriate foreign language skills. Acceptance into the program is considered an honor bestowed in lieu of a scholarship. Most forms of financial aid can be used for this program. Additional information may be obtained at the Office of International Education.

Travel/Study Program: Travel/Study courses are offered during intersessions as well as during the summer months. Students must register four to six months prior to the start of the course and may earn graduate or undergraduate credit depending upon the nature of the course. Approximately ten offerings are available during each academic year, ranging in length from one week to one year. Courses are taught by full time faculty of Southern Illinois University at Carbondale and most do not require a specialized foreign language background. Additional information may be obtained at the Office of International Education.

2. Southern Illinois University at Carbondale sponsors a number of exchange programs with institutions of higher education in other countries. These include the following:

Australia: Cumberland College of Health Sciences, Lidcombe, New South Wales (Rehabilitation Institute).

Brazil: Fundacao Educacional de Bauru, Bauru, San Paulo (Rehabilitation Institute).

China: Liaoning University, Shenyant, Liaoning; Northeast Normal University, Changchun, Jilin; Sichuan University, Chengdu, Sichuan.

Eastern Europe: Eastern European Universities Exchange Program (Department of Chemistry and Biochemistry).

France: Inter-University Center for Film and Critical Studies, Paris, France (Cinema and Photography); University of Caen, Caen, France (Department of Foreign Languages and Literatures).

Germany: University of Hamburg, Hamburg, West Germany (Department of Foreign Languages and Literatures); University of Mainz, Mainx, West Germany (Department of Foreign Languages and Literatures).

Greece: Agricultural College of Athens, Athens, Greece (Cooperative Fisheries Management Research).

Japan: Kansai University for Foreign Studies, Hirakata, Japan (Department of Foreign Languages and Literatures).

Nepal: Tribhuvan University, Kathmandu, Nepal (Department of Higher Education).

Switzerland: Dolmetscherschule, Zurich Interpreters School, Zurich, Switzerland (Department of Foreign Languages and Literatures).

Virgin Islands: College of the Virgin Islands, St. Thomas, Virgin Islands (Department of Botany).

West Bank: An-Najah National University, Nablus, West Bank via Israel.

Information concerning eligibility, requirements, program offerings, and application deadlines may be obtained at the Office of Internatinal Education or the Department involved.

3. Southen Illinois University at Carbondale provides the opportunity for a student to arrange travel and study abroad on an independent basis. Credit might be earned through (a) a department's independent study courses such as readings, individual research, practicum or related types of courses with prior departmental approval; (b) a department or college's travel/study course where offered; or (c) in the course University 388 with major department or program approval. Additional

information is available from the travel/study coordinator, Division of Continuing Education.

4. Southern Illinois University at Carbondale may also grant credit for programs not sponsored by the University. A student may enroll in a study/travel program conducted by a regionally accredited United States institution and transfer the credit to this university. Credits earned in this manner will be evaluated as electives unless a department, program, or the Office of Admissions and Records approved the courses in advance to apply toward specific requirements. Additional information may be obtained from the Office of International Education.

A student may enroll in either a foreign institution or an independent location of a foreign institution. It is important that the student check with the Office of Admissions and Records before registering since many foreign institutions are not accredited. Graduate students would check with the Graduate School. Credits earned in this manner will count as electives only unless a department or program approves them to apply toward specific requirements.

Determination of Residency Status

The following is a direct quotation from the Board of Trustees' "Residency Status Policies", which govern the determination of residency status for admission and assessment of student tuition.

For the purpose of these regulations an *adult* is considered to be a student eighteen years of age or over; a *minor* student is a student under eighteen years of age. The term *the State* means the State of Illinois except in the following instances: (1) For the purposes of assessing undergraduate- and graduate-level student tuition, the Presidents, with the agreement of the Chancellor, may take the term "the State" to include the Kentucky Counties of Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall, Trigg, and Union. (2) For the purposes of assessing undergraduate- and graduate-level student tuition for not more than six semester or nine quarter hours, the Presidents, with the agreement of the Chancellor, may take the term "the State" to include the State of Missouri. Neither exception may apply to the assessment of tuition at the School of Dental Medicine, the School of Law, or the School of Medicine. Except for those exceptions clearly indicated in these regulations, in all cases where records establish that the person does not meet the requirements for resident status as defined in these regulations the nonresident status shall be assigned.

Note: On October 7, 1981, and effective with Spring Semester, 1982, the above policy exceptions for Kentucky and Missouri residents were approved for graduate students only.

Residency Determination

Evidence for determination of residence status of each applicant for admission to the University shall be submitted to the Director of Admissions at the time of application for admission. A student may be reclassified at any time by the University upon the basis of additional or changed information. However, if the University has erroneously classified the student as a resident, the change in tuition shall be applicable beginning with the term following the reclassification; if the University has erroneously classified the student as a nonresident, the change in tuition shall be applicable to the term on which the reclassification occurs, provided the student has filed a written request for review in accordance with these regulations. If the University has classified a student as a resident based on false or falsified documents, the reclassification to nonresident status shall be retroac-

tive to the first term during which residency status was based on the false or falsified documents.

Adult Student

An adult, to be considered a resident, must have been a bona fide resident of the State for a period of at least three consecutive months immediately preceding the beginning of any term for which he registers at the University, and must continue to maintain a bona fide residency in the State, except that an adult student whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a resident student.

Minor Student

The residence of a minor shall be considered to be, and to change with and follow:

a. That of his parents, if they are living together, or living parent, if one is dead; or

b. If the parents are separated or divorced, that of the parent to whom the custody of the person has been awarded by court decree or order, or, in the absence of a court decree or order, that of the parent with which the person has continuously resided for a period of at least three consecutive months immediately preceding his registration at the University; or

c. That of the adoptive parents, if the person has been legally adopted and, in the event the adoptive parents become divorced or separated, that of the adoptive parent whose residence would govern under the foregoing rules if that parent had been a natural parent; or

d. That of the legally appointed guardian of the person; or

e. That of the *natural* guardian, such as a grandparent, adult brother or adult sister, adult uncle or aunt, or other adult relative with whom the person has resided and by whom he has been supported for a period of at least three consecutive months immediately preceding his registration at the University for any term, if the person's parents are dead or have abandoned him and if no legal guardian of the person has been appointed and qualified.

Parent or Guardian

No parent or legal or natural guardian will be considered a resident of the State unless said person (a) maintains a bona fide and permanent place of abode within the State, and (b) lives, except when temporarily absent from the State with no intention of changing his legal residence to some other State or country, within the State.

Emancipated Minor

If a minor has been emancipated, is completely self-supporting, and actually resides in the State, he shall be considered to be a Resident even though the parents or guardian may reside outside the State. An emancipated minor who is completely self-supporting shall be considered to actually reside in the State of Illinois if he has maintained a dwelling place within the state uninterruptedly for a period of at least three consecutive months immediately preceding the beginning of any term registration at the University. Marriage or active military service shall be regarded as effecting the emancipation of minors, whether male or female, for the purposes of this regulation. An emancipated minor whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a resident student.

Married Student

A nonresident student, whether male or female, or a minor or adult, or a citizen or noncitizen of the United States, who is married to a resident of the State, may be classified as a resident so long as the individual continues to reside in the State; however, a spouse through which a student claims residency must demonstrate residency in compliance with the requirements applicable to students seeking Resident status.

Persons Without United States Citizenship

A person who is not a citizen of the United States of America, to be considered a Resident, must have permanent residence status with the United States Immigration and Naturalization Service and must also meet and comply with all the other applicable requirements of these regulations to establish resident status.

Armed Forces Personnel

A person who is actively serving in one of the Armed Forces of the United States and who is stationed and present in the State in connection with that service and submits evidence of such service and station, shall be treated as a resident as long as the person remains stationed and present in Illinois. If the spouse or dependent children of such member of the Armed Forces also live in the State, similar treatment shall be granted to them.

A person who is actively serving in one of the Armed Forces of the United States and who is stationed outside the State may be considered a resident only if the individual was a resident of the State at the time of entry into military service except as otherwise specified by Board policy.

A person who is separated from active military service will be considered a resident of Illinois immediately upon separation providing this person: (a) was a resident of the State at the time of enlistment in the military service, (b) became treated as a resident while in the military by attending school at Southern Illinois University while stationed within the State, or (c) has resided within the State for a period of three months after separation.

State and Federal Penitentiary

A person who is incarcerated in a State or Federal place of detention within the State of Illinois will be treated as a resident for tuition assessment purposes as long as said person remains in that place of detention. If bona fide residence is established in Illinois upon release from detention, the duration of residence shall be deemed to include the prior period of detention.

Minor Children of Parents Transferred Outside the United States

The minor children of persons who have resided in the State for at least three consecutive months immediately prior to a transfer by their employers to some location outside the United States shall be considered Residents. However, this shall apply only when the minor children of such parents enroll in the University within five years from the time their parents are transferred by their employer to some location outside the United States.

Dependents of University Employees

The spouses and dependent children of all staff members (academic, administrative, non-academic) on appointment with the University shall be considered as resident students for purposes of tuition assessment.

Contractual Agreements

The Presidents, with the approval of the Chancellor, may enter into agreements with other institutions in or out of state under the terms of which students at the other institutions are defined as residents of the State of Illinois.

Definition of Terminology

To the extent that the terms *bona fide residence, independent, dependent,* and *emancipation* are not defined in these regulations, definitions shall be determined by according due consideration to all of the facts pertinent and material to the question and to the applicable laws and court decisions of the State of Illinois.

A bona fide residence is a domicile of an individual which is his true, fixed, and permanent home and place to which, whenever absent, the individual has the intention of returning. Criteria to determine this intention include but are not limited to year around residence, voter registration, place of filing tax returns (home state indicated on federal tax return for purposes of revenue sharing), property ownership, driver's license, car registration, vacations, and employment.

Procedure for Review of Residency Status or Tuition Assessment

A student who takes exception to the residency status assigned or tuition assessed shall pay the tuition assessed but may file a claim in writing to the appropriate official for a reconsideration of residency status and an adjustment of the tuition assessed. The written claim must be filed within 30 school days from the date of assessment of tuition or the date designated in the official University calendar as that upon which instruction begins for the academic period for which the tuition is payable, whichever is later, or the student loses all rights to a change of status and adjustment of the tuition assessed for the term in question. If the student is dissatisfied with the ruling in response to the written claim made within said period, the student may appeal the ruling to the President or his designee by filing with the appropriate official within twenty days of the notice of the ruling a written request.

Policy on the Release of Student Information and Access to Student Records at Southern Illinois University at Carbondale

I. Purpose

Southern Illinois University at Carbondale, hereinafter referred to as the University, maintains individual records and information about students for the purpose of providing educational, vocational, and personal services to the student. For the purpose of complying with federal regulations regarding the maintenance of confidentiality of student educational records, as required by the Family Educational Rights and Privacy Act of 1974, the following policy has been enacted.

II. Definitions

A. "Student" is defined as a person who is or has been enrolled at Southern Illinois University in a course of study either on campus or off campus. Solely for purpose of this policy, any student attending Southern Illinois University will be considered to be an adult and to have sole control over the release of his/her information except as provided in this policy. The term "enrolled" is defined as having registered and paid fees into a course of study.

B. "Education records" means those records which are directly related to a student, and are maintained by Southern Illinois University or any subunit or by any party acting for Southern Illinois University. The term does *not* include:

1. Personal records of instructional, supervisory, and administrative personnel which are not revealed to other individuals.

2. Records of a law enforcement unit of an educational institution which are maintained apart from the education records, maintained solely for law enforcement purposes, and are not disclosed to individuals other than law enforcement officials of the same jurisdiction.
   For purposes of this policy, the Southern Illinois University Security Office will be treated as an outside agency and will therefore be required to comply with all regulations relating to the disclosure of information from students' educational records, as set forth in the policy.
3. Employment records, so long as they are maintained separately from any educational record.
4. Records of a physician, psychologist, or other recognized professional or paraprofessional acting in his or her professional capacity which are used only in connection with treatment and are not disclosed to individuals other than those providing the treatment; *Provided*, that these records can be personally reviewed by a physician or other appropriate professional of the student's choice.
5. Records which contain only information relating to a person after that person was no longer a student at Southern Illinois University, such as alumni files.

C. "Student Information" means any information contained in an educational record as defined in II. B.

D. "Personally identifiable information" includes:
1. The name of a student, the student's parent, student's spouse, or other family member.
2. The address of the student.
3. A personal identifier such as the student's social security number or student number.
4. A list of personal characteristics which would make the student's identity easily traceable.
5. Other information that would make the student's identity easily traceable.

E. "Directory information" includes:
1. Student name.
2. Student local address and telephone number.
3. Student home address and telephone number.
4. Current term hours carried.
5. Classification (freshman, sophomore, etc.)
6. Academic unit.
7. Major.
8. Date of attendance.
9. Degrees and honors earned and dates.
10. The most previous educational agency or institution attended prior to enrollment at Southern Illinois University.
11. Participation in officially recognized activity or sport.
12. Weight, height, and pictures of members of athletic teams.
13. Date of birth.
14. Picture.

III. Basic Policy Regarding Disclosure of Information from Educational Records

A. Disclosure not requiring prior consent
1. The appropriate recordkeeping office shall obtain the written consent of the student before disclosing personally identifiable informa-

tion from the records of a student, except in the case of directory information or disclosures to:

a. The student himself/herself.
b. University personnel who have a legitimate educational need to permit their functioning or research. The sufficiency of the need will be determined by the head of the unit from which the records are sought.

   Student information supplied to any Southern Illinois University personnel or unit is provided on the basis that it is needed to permit their necessary functioning. All members of the faculty, administration, and clerical staff must respect confidential information about students which they require in the course of their work. They are bound by the conditions outlined in this policy statement relative to the release of student information. All institutional personnel should be alert to refer promptly to the appropriate office requests for transcripts, certifications, or other information which that office typically provides. They should restrict their responses to acknowledging, when appropriate, the receipt of requests for student information germane to their sphere of responsibility.
c. Officials of other schools or school systems in which the student seeks or intends to enroll, if there is a legitimate need. The sufficiency of the need will be determined by the head of the unit from which the records are sought. A copy of any information sent will be provided to the student upon request.
d. Faculty or students conducting student characteristic research providing the research project has written approval of the academic unit executive officer sponsoring the research and providing guarantees are made that no personally identifiable information will be published or released.
e. Certain state and federal representatives specified by law for the sole purpose of evaluation and auditing of governmentally funded programs in which the University participates, with the guarantee that the identity of the students will be protected.
f. State and local officials as directed by the State Statute adopted prior to November 19, 1974, as approved by University Legal Counsel.
g. Organizations conducting studies for, or on behalf of, state or federal educational agencies or institutions for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction, with the guarantee that the identity of the student shall be protected.
h. In connection with financial aid for which the student has applied or received.
i. Accrediting organizations to carry out their accrediting function, with the guarantee that the identity of the student shall be protected.
j. Appropriate persons in connection with an emergency, if knowledge of such information is necessary to protect the health or safety of a student or other persons.
k. Comply with a judicial order or subpoena, but the University should make a reasonable effort to notify the student first. The sufficiency of the order or subpoena will be determined by University Legal Counsel and that office shall send the required notice to the student.

B. Disclosure Requiring Prior Consent
   1. Except as listed in A above, all requests for student information other than directory information must be accompanied by a written consent of the student.
   2. The written consent required by this section must be signed and dated by the student giving the consent and shall include (a) a specification of the records to be disclosed, and (b) the party or parties to whom the disclosure may be made.
   3. When the disclosure is made pursuant to this section, the appropriate recordkeeping office shall, upon request, provide a copy of the records which are disclosed to the student.
   4. Student information will not be released to parents of students without the student's permission.

C. Disclosure of Directory Information
   Directory information pertaining to students may be released by the University at any time provided that it publish the definition at least once each academic year in the campus student newspaper or other designated publication with wide circulation, and the individual student is given a reasonable period of time to inform the University in writing, through the Office of Admissions and Records, that he/she does not wish such information concerning himself/herself to be released without his/her prior consent. The Office of Admissions and Records will be responsible for identifying or deleting all information which the student desires not to be released outside the University and for informing all University recipients of that information that such information is not to be released. The student must request deletion of information each year.

   The procedural requirements of this section do not apply to the disclosure of directory information from the education records of an individual who is no longer in attendance at the University. Thus, the University (or appropriate recordkeeping office) is not required to give public notice of the above to former students.

   All recipients of student information will be bound by this policy. Lists of student information are never knowingly provided to any requesting party for a commercial or political purpose. If a student directory is published, it shall be equally available to all.

D. Records of Disclosure Made
   Records of disclosure are not required to be kept in the record of a student when the disclosure is initiated by the student himself/herself.

   The University may disclose personally identifiable information from the education records of a student only on the condition that the party to whom the disclosure is made will not further disclose the information without the student's written consent, except in the case of disclosure of directory information.

   The University shall, except for the disclosure of directory information, inform the party to whom disclosure is made of the obligation to receive the student's consent before further disclosure to other parties.

E. Waiver of Right to Inspect and Review Education Records
   1. The student may waive his/her right to inspect and review education records. The waiver, in order to be valid, must be in writing and signed by the student. The University (or each appropriate recordkeeping office) may not require a waiver of rights but it may request such a waiver.
   2. If a student has waived his/her right to see confidential letters of recommendation placed in his/her record after January 1, 1975, the waiver will be effective only if: (a) the applicant or student is, upon

request, notified of the names of all individuals providing the letters or statements; (b) the letters or statements are used only for the purpose for which they were originally intended, and (c) such waiver is not required by the University as a condition of admission to or receipt of any other service or benefit from the University.

3. A waiver may be revoked, but the revocation must be in writing and signed by the student. Revocation of waiver will affect only documents received after its execution.

IV. Identification and Description of Student Information

A. Academic Records

The Office of Admissions and Records retains the official academic record of a student. It is a cumulative history of a student's admission, registration, and academic participation and performance. Certain biographic and demographic information is also kept for identification for enrollment and research-related purposes. For information concerning these records contact the Director of Admissions and Records.

Academic records may also be maintained in academic units, departments, and divisions. For information concerning these records contact the head of the academic unit, department, or division in question. The Office of Institutional Research also maintains some academic records.

B. Financial Records

Offices within the Business area maintain certain financial records which relate to the payment and accounting of tuition, fees, and other charges. They also maintain records which record student loans and grants. For information concerning these records, contact the Bursar's Office.

For billing purposes, the Office of Admissions and Records maintains a record of financial aid received and tuition and fees paid. For information concerning these records, contact the director of Admissions and Records.

The Office of Student Work and Financial Assistance maintains records of students receiving loans, grants, and aid along with scholarship information and some academic information. It also maintains records pertinent to student employment including the family financial statement. For information concerning these records, contact the Director of Student Work and Financial Assistance.

The Housing Office maintains records of housing accounts. For information concerning these records, contact the Director of Housing.

C. Medical/Counseling/Clinical Center Records.

The University Health Service maintains medical records of students who have required medical assistances through the student health program. Only information pertinent to the health of the individual is contained therein. For information concerning these records, contact either the administrative director or the medical director of Student Health.

The University Counseling Center maintains records pertinent to services rendered by that office. For information concerning these records, contact the director of Counseling Center.

The University Clinical Center maintains records pertinent to services rendered by that office. For information concerning these records, contact the director of the Clinical Center.

D. Disciplinary Records

The Office of Student Affairs maintains records of disciplinary action which has been taken against a student with documentation pertaining

thereto. That office also maintains only the academic information necessary to permit its functioning. For information concerning these records, contact the dean of Student Life.

E. Placement Records
The Office of Career Planning and Placement creates a record for those persons who wish to avail themselves of its services, with student's voluntary participation. This information is distributed to potential employees. It consists of self-completed resumes and various personal references. For information concerning these records, contact the director of Career Planning and Placement.

V. Access to Records

A. Right to Inspect or Review Educational Records
1. The student has the right to physically review his records in the presence of a designated University representative.
2. Requests for review may be required to be submitted in writing to the appropriate office.
3. That office shall comply with the request within a reasonable time, but in any case, compliance shall be no more than thirty (30) days after the receipt of the request.
4. Where necessary, interpretation of the record shall be provided by qualified University personnel.
5. Original records cannot be removed from University premises. A copy will be provided if requested, but only if not providing a copy would preclude review of the educational records by the student.
6. Copies of transcripts from other educational institutions will be provided only if the original source of those transcripts is no longer available or going to the original source would cause undue hardship as determined by this University.

B. Limitations on Right to Inspect or Review
1. The student may not inspect the following records:
   a. Financial records and statements of their parents.
   b. Confidential letters or materials placed in records before January 1, 1975 so long as they were solicited with an understanding of confidentiality and are used only for the purpose for which they were written.
   c. Confidential letters of recommendation and confidential statements of recommendation placed in the education records of the student after January 1, 1975, are subject to the student's right to inspect and review unless the student has signed a written waiver.
2. Reports that involve two or more persons may be censored to protect the indentity of the other person(s).

C. Administrative Hold on University Records
On occasion it is necessary for a University to place an administrative hold on a student's ability to request a transcript, to register for a subsequent term, to reenter the University after a period of attendance interruption, or to be officially graduated.

In cases where an administrative hold has been placed on a student's record, the student may view such records but will not be able to obtain a copy of said record until the administrative hold is removed through the appropriate University channels.

VI. Challenging Contents of a Student's Educational Record

A. Purpose
A student has the right to challenge the content of a record on the ground

that he/she believes it is inaccurate, misleading, or otherwise in violation of his/her privacy or other rights and to have inserted in the record his/her written explanation of its contents. Academic grade review procedures are covered in the University Catalog and/or such particular academic unit, department or division and not by this policy.

B. Procedure
To initiate such a challenge, the student shall, within sixty (60) days after he/she has inspected and reviewed the record in question for the first time, file with the University office responsible for maintaining such record a written request for correction, on a form specified by the University. Within thirty (30) days following receipt of such request, the head of such office, or his/her representative, shall review the record in question with the student and either order the correction or deletion of such alleged inaccurate, misleading, or otherwise inappropriate data as specified in the request or notify the student of the right to a hearing at which the student and other persons directly involved in the establishment of the record shall have an opportunity to present evidence to support or refute the contention that the data specified in the request are inaccurate, misleading, or otherwise inappropriate.

C. Hearing
The student shall be given written notice sent to his/her last known address of the time and place of such hearing not less than ten (10) days in advance. The hearing will be conducted by a University representative who does not have a direct interest in the outcome. The student might well challenge the hearing officer. Any disagreement regarding the hearing officer will be resolved by the appropriate Vice President.

The student shall have the right to attend the hearing, to be advised by an individual of his/her choice at his/her own expense, including an attorney, and to call witnesses in his/her behalf. The student shall be notified in writing of the decision within ten (10) days following the hearing or within five (5) days of a decision without a hearing. Such decision is final. The decision reached shall be based solely upon the evidence presented at the hearing and shall include a summary of the evidence and reasons for the decision.

(Note: A hearing may not be requested by a student to contest the assignment of a grade; however, a hearing may be requested to contest whether or not the assigned grade was recorded accurately in the education records of the student.)

VII. Destruction of Records

A. The University may destroy education records when they are no longer necessary, with the following limitations:
1. Education records may not be destroyed if there is an outstanding request to inspect and review them.
2. Explanations placed in the record by the student and the record of disclosure of information must be maintained as long as the education record to which it pertains is maintained.

VIII. Right to File Complaints

A. If the student thinks his or her rights have been violated, he or she should first file a complaint with the head of the office which maintains the records in question.

B. After exhausting all the internal remedies available within the University, if the student still thinks his or her rights have been violated, written complaints can be filed with:

The Family Educational Rights and Privacy Act Office

Department of Health, Education, and Welfare
330 Independence Avenue S.W.
Washington, D.C. 20201

The office shall notify the complainant and the University of the receipt of the complaint and an investigation will follow.

Issuance of Transcripts

A transcript of the student's official educational record is issued by the Office of Admissions and Records under the following conditions: A transcript is sent, issued, or released only upon a student's request or with the student's explicit permission, except that such permission is not required when University faculty and administrative personnel or other educational institutions request transcripts for official purposes. In addition, requests will be honored from a philanthropic organization financially supporting a student and from a recognized research organization conducting educational research provided the confidential character of the transcript is protected. A transcript will be issued directly to a student upon request. The transcript will have the statement, Issued to the Student, stamped on its face. Transcripts will be sent without charge to recipients other than the student as requested, in writing, by the student. A transcript will not be sent, issued, or released if a student owes money to the University.

Student Conduct Code

The University, through the Student Conduct Code, provides protections which promote and strengthen the learning process. The code is designed to create and maintain an environment conducive to the educational mission of the University. As an educational tool, the code identifies rights and responsibilities of students. Sanctions, when used, are intended for educational growth rather than punitive effect. The administrative responsibility for implementing, enforcing, and evaluating the code is assigned to the Student Life Office.

Each student is expected to know the code which is published in the *Daily Egyptian* and available in brochure form in the Student Life Office. Disciplinary charges for social misconduct are filed in the Student Life Office on behalf of the reporting party or victim. Disciplinary charges for academic dishonesty are filed in the unit in which the violation occurred. The instructor, with the approval of the department chairperson, may resolve a case that does not involve disciplinary suspension. Formal hearings and disciplinary suspension cases are referred to the appropriate academic dean. An appeal procedure is available to insure procedural due process.

Further details about the code and judicial procedures are made available to any student charged with a violation. Students may also visit the Student Life Office, Building T-40, for additional information.

3 Academic Programs

Degrees Offered

Southern Illinois University at Carbondale grants the following degrees:

ASSOCIATE
Associate in Applied Science

BACCALAUREATE
Bachelor of Arts
Bachelor of Fine Arts
Bachelor of Music
Bachelor of Science

ADVANCED
Master of Accountancy
Master of Arts
Master of Business Administration
Master of Fine Arts
Master of Music
Master of Public Affairs
Master of Science
Master of Science in Education
Specialist Degree
Doctor of Business Administration
Doctor of Philosophy
Doctor of Rehabilitation

In addition to the above degrees, Southern Illinois University at Carbondale offers undergraduate courses in preprofessional areas.

The School of Law and the School of Medicine offer professional degrees. Information about the School of Law may be obtained by writing the dean, School of Law, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. Information about the School of Medicine may be obtained by writing the dean, Southern Illinois University School of Medicine, P.O. Box 3296, Springfield, Illinois 62708.

For information concerning academic programs on the advanced degree level, refer to the Graduate Catalog or write the dean, Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Degree Requirements

Associate Degree

Each candidate for an associate degree must complete a minimum of 60 hours of credit in approved courses. Each student must maintain a *C* average. In addition to the technical courses each program requires certain General Education courses to be taken. The degree granting unit for the associate degree is the School of Technical Careers.

Baccalaureate Degree

Each candidate for a bachelor's degree must complete the requirements listed below.

Hour Requirements. Each student must have earned a minimum of 120 semester hours of credit, although some programs may require more. Of the 120 hours, at least 60 must be earned at a senior-level institution. All credit granted may be applied toward the 60-hour requirement unless the credit has specifically been designated as being from a community college. Credit for work experience, CLEP, military credit, and proficiency examination credit awarded by an accredited senior-level institution are counted toward the 60-hour requirement.

Residence Requirements. Each student must complete the residence requirement by taking the last year, which is defined as 30 semester hours, or by having three years of credit, which is defined as 90 semester hours at Southern Illinois University at Carbondale. Only credit for those courses for which the student has registered and for which a satisfactory grade has been recorded at Southern Illinois University at Carbondale may be applied toward the residence requirement hours. Students enrolled in programs offered for the military will have completed the residence requirement for the University upon completion of all courses required by the program.

Average Requirements. Each student must have a *C* average for all work taken at Southern Illinois University at Carbondale and a *C* average for all major work taken at Southern Illinois University at Carbondale.

The University has adopted a policy for students whose only graduation problem concerns the *C* average for all work taken at Southern Illinois University at Carbondale. Such students may ask that the average be computed by one of the following methods: (1) by excluding from calculation of the grade point average a maximum of ten semester hours of *D* or *F* grade earned outside the major which was taken prior to the last 60 semester hours of completed work at Southern Illinois University at Carbondale or, (2) by earning a grade point average of 2.10 or higher for the last 60 semester hours of work completed at Southern Illinois University at Carbondale. The student will be graduated if the average meets either of the two alternatives. It should be noted that the two alternatives are offered as a means of computing the grade point average for graduation only and may not be used for any other purpose.

Course Requirements. Each student must meet the University requirements and the requirements of the academic unit, the major, and the minor, if required. The General Education requirements which are explained later in this chapter total 45 semester hours of credit although there are methods available to reduce the number for certain students. The requirements of each academic unit are also listed in this chapter, while the requirements for the specific major and minor programs are explained in Chapter 4.

Second Bachelor's Degree

A student may earn a second bachelor's degree upon completion of a minimum of 30 hours, making a total of 150 hours minimum, provided the student fulfills the requirements of the department and college or school for the second bachelor's degree. Students pursuing a second baccalaureate degree must meet the General

Education requirements of 45 semester hours if the department or school or college so requires. Students may, however, complete a second bachelor's degree under the Capstone Program if the department offers this option for the first baccalaureate degree. If a student's first bachelor's degree is from another university, 30 hours in residence is required to fulfill the requirements for the second bachelor's degree. If the first bachelor's degree was earned at Southern Illinois University at Carbondale, a minimum of 10 semester hours of the 30 required must be taken in residence at the University.

Preprofessional Programs

Preprofessional students may, subject to certain conditions, obtain a bachelor's degree after three years' work (90 semester hours) at Southern Illinois University at Carbondale and one or more year's work in a professional school. During their three years of residence at Southern Illinois University at Carbondale, they need to have completed all requirements other than elective hours for the bachelor's degree which they are seeking.

In some cases the completion of major requirements is possible by their taking certain courses at the professional school, but this is permitted only upon the prior approval of the appropriate divisional head. Also, there needs to be completion of at least one year of professional school with acceptable grades in an approved medical school, an approved dental school, an approved veterinary school, an approved law school, an accredited physical therapy school, a hospital plan approved by the University or an accredited school of osteopathy. In all cases, all University graduation requirements must be met. It is advisable for a student interested in this program to make the decision to seek a bachelor's degree before entering the professional school so that any questions may be clarified at an early date.

The 3/2 program of the College of Business and Administration is available to qualified transfer students and students majoring in areas other than business. The program permits a student to devote a part or all of the fourth year of study to fulfilling requirements for the Master of Business Administration degree. For details, contact the associate dean for graduate studies in business administration.

General Education Requirements

The University believes in a strong, well-rounded general education for all students which includes a common core of knowledge. It has, therefore, established General Education course requirements which serve as the general education requirements for all baccalaureate degrees. The University also recognizes that not all students have the same interests or goals so the General Education requirements provide for flexibility in making course selections to fulfill requirements. The descriptions for the General Education courses are listed at the beginning of Chapter 4 of this bulletin.

Area A: Our Physical Environment and Biological Inheritance 9
- Core: Select one 3-hour course from each of the following two groupings
  1. GE-A 101 or GE-A 106 or GE-A 110
  2. GE-A 115 or GE-A 117 or GE-A 118
- Elective: One additional course selected from any other courses offered in GE-A

Area B: Our Social Inheritance and Social Responsibilities 9
- Core: Select one 3-hour course from two of the following three groupings
  1. GE-B 103 or GE-B 104 or GE-B 105
  2. GE-B 211 or GE-B 212
  3. GE-B 108 or GE-B 202
- Elective: One additional course selected from any other courses offered in GE-B

Area C: Our Insights and Appreciations 9
Core: Select one 3-hour course from two of the following three groupings
1. GE-C 100 or GE-C 101
2. GE-C 102 or GE-C 208
3. GE-C 122 or GE-C 330
Elective: One additional course selected from any other courses offered in GE-C
Additional coursework from areas A, B, or C 3

Students must complete a total of 30 semester hours in Areas A, B, and C. Within each area, they must complete a minimum of 9 semester hours with the required distributions. The remaining three semester hours may be selected from any coursework offered in areas A, B, or C or from the approved substitution list which has not already been counted for General Education.

Area D: Organization and Communication of Ideas 11
Composition: GE-D 101 and GE-D 117, GE-D 118, or GE-D 119 . 5
GE-D 120, if completed with a grade of *C* or better, will also complete the composition requirement.
Speech: GE-D 152 or GE-D 153 3
Mathematics: GE-D 107 3
Mathematics 114 will also complete the mathematics requirement.
Area E: Human Health and Well Being 4
GE-E 107 or GE-E 201 or GE-E 236 2
Two hours selected from physical education activity courses offered in GE-E 2

Total 45

Some programs and upper division academic units require specific General Education courses, particularly in English composition. A student may determine these requirements by referring to program descriptions in this chapter and in Chapter 4.

MEETING GENERAL EDUCATION REQUIREMENTS

These requirements may be met by any of the following, subject to the rules and limitations appropriate to each means.

1. Completion of appropriate General Education courses (listed at the beginning of the next chapter) with a satisfactory grade;
2. Proficiency credit by examination for General Education courses or approved substitute courses.
3. Proficiency credit via General Examinations of the College Level Examination Program or Advanced Placement Examinations of the College Board (See Program Flexibility in Chapter 2);
4. Transfer credit for courses evaluated as equivalent to General Education courses or approved substitute courses; and
5. Completion of departmental courses listed as substitutions for General Education courses. (See List of Approved Substitutions below.)

General Education courses are offered at the 100, 200, and 300 levels. Few of these courses have specific prerequisites, and a student may decide when to enter a given level. Academic advisers can provide the student with appropriate information about individual General Education courses.

Beginning students are not restricted to enrolling in only General Education courses; the student who has selected a major is assisted in determining the proper courses to take by consulting curriculum guides obtained from an academic adviser.

List of Approved Substitutions. The department courses which have been ap-

proved as substitutions for General Education courses are listed below. In no case does the departmental course substitute for more credit hours than the credit hours allowed in the comparable General Education course.

GENERAL EDUCATION COURSE	APPROVED SUBSTITUTES
GE-A 101-3	One of: Physics 203, 205, 253, 255, or 3 semester hours of technical physics. (The substitution of Physics 253 or 255 is limited to one semester hour.)
GE-A 106-3	One of: Chemistry 115, 140, 222, or 4 semester hours of technical chemistry
GE-A 110-3	Geology 220
GE-A 115-3	One of: Biology 306, 308, 309; Botany 200; Zoology 118
GE-A 202-3	Physics 203b or 205b
GE-A 240-3	Biology 307
GE-A 330-3	Military credit for meteorology
GE-A unassigned-1 to 12	One to 12 semester hours from University Honors 251a and/or 351a
GE-B 103-3	Geography 300
GE-B 211-3	One of: Agribusiness Economics 204; Economics 214, 215
GE-B unassigned-1 to 12	One to 12 semester hours from University Honors 251b and/or 351b
GE-C 100-3	Music 101, or 3 hours of 102, 013, 014, 017, 020, 021, 022
GE-C 101-3	Art 100
GE-C 204-3	Art 207
GE-C 206-3	Music 105a
GE-C 293-3	English 209
GE-C Foreign Language	Foreign Language
(*Note:* A student may substitute on an hour-for-hour basis to a maximum of four hours in GE-C.	
GE-C unassigned-1 to 12	One to 12 semester hours from University Honors 251c and/or 351c
GE-D 101-3	Linguistics 101
GE-D 107-3	One of: Mathematics 108, 109, 111, 114, 116, 117, 139, 140, 150, 151, 159, 250, 259, 282, or 4 semester hours of technical mathematics
GE-D 117-2	Linguistics 102
GE-D 118-2	One of: Administrative Sciences 202, Linguistics 103, or 2 semester hours of technical writing
GE-E 101-114-1 to 4	Four semester hours from: Physical Education 115, 116, 117, 118, 119, 120, 170
GE-E unassigned-1 to 4	One to 4 semester hours from University Honors 251e and/or 351e
GE-E unassigned-1 to 4	ROTC field training
GE-E 201-2	Health Education 350

A maximum of 15 semester hours of comparable technical coursework can be substituted for General Education requirements. Some of these substitutions are listed above; others may be possible on an individual request to the associate vice president for academic affairs and research (planning).

Flexibility and Other Features. The University believes in a strong, well-rounded general education program but does not accept the idea that every student must

take the same course or program in meeting the objectives. Therefore, considerable latitude is permitted the student in meeting the objectives; alternate routes are provided within the General Education framework.

Accommodations to differences in student background, interest, and aspirations include:

1. Substitutions of approved departmental courses can be made for General Education courses as previously outlined;
2. Proficiency examinations are offered regularly for some General Education courses; students should consult with their academic advisers for information concerning these examinations;
3. A University Studies Program (See Chapter 4) allows the students to design a broad undergraduate education.

The Transfer Student and General Education. A transfer student who expects to graduate from Southern Illinois University at Carbondale with a baccalaureate degree must meet the General Education requirements as outlined previously. All work done at other institutions will be evaluated and comparable courses will be applied toward the General Education requirements.

Completion of an associate degree in a baccalaureate-oriented program in an accredited Illinois two-year institution, provides that the student will (a) be accepted with junior standing and (b) be considered to have completed the General Education requirements. Associate degrees earned at other than Illinois two-year institutions will be reviewed by the Office of Admissions and Records. If the degree is determined to be baccalaureate-oriented, the same benefits will be extended to those graduates. Credit from an accredited two-year institution is limited only by the provision that students must earn at least 60 semester hours of work at Southern Illinois University at Carbondale or at any other approved four-year institution and must complete the residence requirements for a degree from the University.

Additional information concerning admission of a transfer student and the evaluation of transfer credit can be found in the sections of this catalog pertaining to those specific subjects.

Capstone Program

The Capstone Program is for the transfer student who has earned an Associate in Applied Science degree or the equivalent certification and whose needs can be met within one of the participating departments. It is a two-year program that gives maximum credit for previous academic and work experiences in the student's occupational field. The Capstone Program's purpose is to provide an opportunity for students to add to the marketable occupational skills and competencies which they have already acquired.

Key features of the Capstone Program are: (1) It is for selected occupational students who have changed their educational and occupational goals; (2) It is an alternative baccalaureate degree program involving no more than two additional years of college at a four-year institution; (3) It seeks to recognize similar objectives in both two-year occupational programs and four-year baccalaureate degree programs; (4) It seeks to recognize similar objectives in certain work experiences and in four-year baccalaureate degree programs; and (5) It provides a unique opportunity for developing secondary and post-secondary occupational teachers who possess strong work experience and training in a variety of technical specialties and sub-specialties.

The Capstone Program at Southern Illinois University at Carbondale can lead to the baccalaureate degree in any of the following areas:

School of Agriculture
- Agribusiness Economics
- Agricultural Education
- Agricultural Education and Mechanization
- Agriculture, General
- Animal Industries
- Food and Nutrition
- Plant and Soil Science

College of Education
- Business Education
- Child and Family
- Clothing and Textiles
- Home Economics Education
- Occuational Education

College of Human Resources
- Administration of Justice

College of Engineering and Technology
- Industrial Technology

College of Liberal Arts
- Paralegal Studies for Legal Assistants

School of Technical Careers
- Aviation Management
- Career Development
- Electronics Management
- Fire Science Management
- Health Care Management

The listing of majors which participate in the Capstone Program may change from time to time.

REQUIREMENTS FOR THE BACCALAUREATE DEGREE THROUGH CAPSTONE

A student completing the degree through the Capstone Program must complete the hour requirements, residence requirements, and average requirements required for all bachelor's degrees. These requirements are explained at the beginning of this chapter. The course requirements for the Capstone Program are explained below.

The following General Education requirements must be satisfied:

Science	6 semester hours
Social Science	6 semester hours
Humanities	6 semester hours
Health and Physical Education	3 semester hours
English Composition	one course
Mathematics	one course
Speech	one course
Minimum Total	30 semester hours

In addition to the General Education requirements, the student must complete the requirements specified in a contract to be developed between the student and the academic unit or department representative. The contract must include two years of work (60 semester hours) after receiving the associate degree or equivalent certification and must list the remaining requirements for the baccalaureate degree.

PROCEDURES FOR APPLYING TO THE CAPSTONE PROGRAM

To be considered for the Capstone Program, the following conditions must be met:

1. Admission to the University and to the department offering the capstone option must be completed. An application to the Capstone Program cannot be processed prior to official admission into the University.
2. The applicant must complete an associate degree program or its equivalent certification.
3. The applicant must have a minimum grade point average of 2.25 (4.0 grading scale) as computed by Southern Illinois University at Carbondale in accordance with University grading policies and procedures.
4. The applicant must file the application to the Capstone Program no earlier than one term prior to the intended entry into the program and no later than the completion of the first term of attendance at Southern Illinois University at Car-

bondale. Southern Illinois University at Carbondale students need to submit the application during the term preceding or just following completion of associate degree requirements.

If advance approval is granted to pursue a Bachelor of Science degree through the Capstone Program and the minimum requirements of points 2 and 3 are not met, the approval for admission to the program will be withdrawn.

Academic Units and Programs Offered

School of Agriculture

GILBERT H. KROENING, *Dean*

Departments: Agribusiness Economics; Agricultural Education and Mechanization; Animal Industries; Forestry; Plant and Soil Science

The School of Agriculture offers the following majors leading to the Bachelor of Science degree.

Agribusiness Economics
Agricultural Education
Agricultural Education and Mechanization
Agriculture, General
Animal Industries
Food and Nutrition
Forestry
Plant and Soil Science

It is recommended that high school students who are planning to pursue one of the above majors include the following in their high school program: four units of English, two to four units of mathematics (algebra, geometry, advanced mathematics); two to three units of science (biology, chemistry, physics); and two to three units of social studies. Courses in agriculture at the high school level are very beneficial but are not specifically required.

For transfer students wishing to pursue a major in one of the agricultural or forestry areas, courses taken prior to entering Southern Illinois University at Carbondale should include a distribution in the physical and biological sciences, social sciences, and humanities. In addition, a course in speech and appropriate sequences in English composition and college algebra should be included. A potential transfer student who has already identified a major for the bachelor's degree may select with greater precision the courses which will be transferred by consulting the curriculum for that major in Chapter 4.

A student planning to take preprofessional courses in veterinary science should register in the School of Agriculture's four-year curriculum in animal industries.

Qualified candidates for the Capstone Program are accepted with major in agribusiness economics, agricultural education, agricultural education and mechanization, animal industries, general agriculture, and plant and soil science. The Capstone Program is described earlier in this chapter.

Of the recent graduates of the School of Agriculture, about 35% have been employed in private industry, about 20% have entered farming or farm management and about 15% have been employed in each of: government (federal, state, county, and city); education or extension; graduate study or professional schooling.

In addition to preparing students for employment in the traditional agricultural and agriculturally related occupations, the School of Agriculture is increasing its emphasis on the currently important areas of environmental studies and ecology.

School of Agriculture students come from both rural and urban homes. Approximately 30% of agriculture and forestry students are women. Students who elect

any one of the seven majors in the School of Agriculture are counseled and advised for registration in the school. Graduates receive the Bachelor of Science degree.

The Agriculture Building houses the offices, classrooms, and laboratories of the school. Other research and teaching facilities include over one-third acre of greenhouses plus 2,000 acres of farm and timber land.

College of Business and Administration

THOMAS G. GUTTERIDGE, *Dean*

Departments: Accountancy; Administrative Sciences; Finance; Marketing

The College of Business and Administration aims to prepare students to perform successfully in business and other organizations such as government and other not-for-profit organizations functioning within a changing social, economic, and political environment. Study provides the student with fundamental principles and practices of organizational behavior and allows the mastering of knowledge and skills for effective management. The curriculum provides a broad base for understanding business while simultaneously allowing in-depth study within an area of concentration. Students find that the professional education they receive in the college is desired by business, governmental units, and other public institutions. The advanced curriculum and related programs provide students not only with a meaningful education but with a means of relating that education to organizations and commerce.

The College of Business and Administration offers the following majors leading to the Bachelor of Science degree.

Accounting	Business Economics
Administrative Sciences	Finance
Business and Administration	Marketing

Any student, whose personal and professional goals cannot be met by any of the majors listed above, may design a special major in accordance with the University guidelines which are fully described in Chapter 4 of this catalog.

While minors are not offered, academic advisers of the college will assist and counsel those students enrolled in other units of the University having an interest in electing business courses.

All programs offered in the College of Business and Administration are accredited by the American Assembly of Collegiate Schools of Business.

The College of Business and Administration offices are located in Henry J. Rehn Hall, and the classes are conducted in various buildings throughout the campus.

Pre-College Preparation. High School and preparatory school students are urged to follow a program which includes at least three units of both English and mathematics, with a substantial portion of the remainder of their study programs devoted to such academic subject areas as humanities, the sciences, and social studies.

Transferred Credits in Business Courses. Subject to the University's policies regarding acceptance of transferred credits, the college accepts college-level credit earned in business and economics courses from accredited two- or four-year institutions of higher education and counts such credit toward the 120 semester hours required for graduation. However, if such courses are offered at the lower division (freshman and sophomore) level at the institution where completed, only those courses shown below will be treated as equivalencies to college- or departmental-required courses.

Subject	*Hours*
Principles of accounting	6
Cost accounting	3
Economic principles	6
Business economics statistics (where college algebra is a prerequisite)	3
Basic computer courses[1]	3

[1]Computer coursework completed at other universities and colleges will be accepted as transfer credit for the College of Business and Administration core computer requirement if that course is designed to teach one and only one of the following languages: FORTRAN, BASIC, COBOL, PASCAL, RPG, PLI, or ALGOL. Courses that survey numerous languages are not acceptable. Further, coursework with emphasis on unit record or data processing equipment will not be considered equivalent to the college's computing requirement. Acceptable coursework should have a one-language base and present the student with advanced programming concepts, e.g., loops, arrays, etc.

Additionally, three semester hours of introduction to business and three semester hours of business law (contracts and agency) completed at the lower division level are acceptable in satisfaction of department requirements, in those programs where these courses are required.

Students also have the opportunity of validating additional coursework and nothing in the above statement abridges a student's right to satisfy graduation requirements by proficiency (or competency) examinations. Such examinations are treated as a student right by the college and are available for most courses.

Admission Policy. The admission policy to the College of Business and Administration shall be the same as that of the University.

Retention Policy. In order to remain in the College of Business and Administration, university retention standards must be met, and before the junior year (56 hours of credit), a student must have completed with a minimum grade of *C* at least five of the following seven courses or equivalencies: GE-D 101; GE-B 202; Mathematics 116 and 117 or 139 and 140; Economics 214, Accounting 220; and Administrative Sciences 208. Transfer students with more than 56 hours upon entering the College of Business and Administration who have not completed at least five of the seven courses with the minimum *C* grade must do so within one semester in order to remain in the College of Business and Administration. Students who have completed 42 or more hours without completing at least five of the prescribed seven courses will be given a warning of possible termination from the College of Business and Administration.

Grade Point Average Requirement. Graduation from the College of Business and Administration requires achievement of a 2.00 grade point average in all business-prefix (ACCT, ADSC, ECON, FIN, MKTG) courses offered at Southern Illinois University at Carbondale. Accounting majors are subject to the additional requirement of achieving a grade of *C* or better in accounting-prefix (ACCT) courses completed at Southern Illinois University at Carbondale.

Pass/Fail Policy of the College. Business majors may not register on a Pass/Fail basis for courses used to satisfy requirements in the College of Business and Administration.

Course Sequencing. It is of the utmost importance that required courses be sequenced properly. Sequencing guides are available from the college's academic advisement center and are published in the College of Business and Administra-

tion's *Student Information Manual.* Courses on the 300 to 400 levels are reserved for junior and seniors.

Forty Percent Rule. At least 40% of the coursework of all business majors must be devoted to courses offered outside the College of Business and Administration; at least 40%, to courses offered by the College of Business and Administration.

Multiple Majors in Business. Business majors may choose to complete two or more of the six majors offered by the college. While all requirements of each major must be satisfied, this can usually be accomplished through judicious use of electives without extending anticipated graduation dates beyond one semester. All majors will be noted on the diploma issued on completion of the Bachelor of Science degree.

Special Majors. Students with special interests or needs which cannot be met by any of the majors offered by the college may participate in designing their own programs under the special major program. Examples of such programs include those designed to prepare graduates for careers such as managers of airports, hospital administrators, and business consultants. To support a growing trend among students to utilize the special major to prepare themselves for careers in small business management, the college has added to its offerings such courses as Administrative Sciences 350, Finance 350, and Marketing 350. Special major programs must be coherent and unified and have as a sponsor a member of the teaching faculty of the college. All Southern Illinois University at Carbondale and college requirements must be met.

General Education Courses Prescribed for Business Majors
Area A: None
Area B: GE-B 202 and Economics 214 (an approved General Education substitute)
Area C: None
Area D: GE-D 101; Mathematics 139 or 116 (approved General Education substitutes) and GE-D 152 or 153. Administrative Sciences 202 is a required substitute in Area D for GE-D 118.
Area E: None
These hours count toward partial fulfillment of General Education Requirements of 45 semester hours.

Professional Business Core. The professional business core, required of all College of Business and Administration students, is comprised of the following courses:

Courses	*Semester Hours*
Accounting 220, 230	6
Administrative Sciences 208, 304, 318, 481	12
Computer Science 212 or Electronic Data Processing 217	3
Economics 215	3
Finance 320, 370[1]	6
Marketing 304, 305	6
Mathematics 140 or 117[2]	4-5
Total	40-41

[1]The combination of Finance 271 and 372 may be subsituted for 370.
[2]Mathematics 150 may be substituted for 140 or 117.

College of Communications and Fine Arts

KEITH R. SANDERS, *Dean*

Departments: Cinema and Photography; Communication Disorders and Sciences; Radio-Telvision; Speech Communication; Theater
Schools: Art; Journalism; Music

The College of Communications and Fine Arts offers the Bachelor of Arts degree in the following majors or specializations within majors:

Art (some specializations)
Cinema and Photography
Design
Music (some specializations)
Radio-Television
Theater

The Bachelor of Science degree is awarded in other majors or specializations within majors:

Art (some specializations)
Communication Disorders and Sciences
Journalism
Speech Communication

The Bachelor of Fine Arts degree is awarded for some specializations in the School of Art.

The Bachelor of Music degree is awarded for some specialization in the School of Music.

Additional information about the majors offered in the College of Communications and Fine Arts is offered elsewhere in this bulletin. Students who are considering enrollment in a major should read the section on curriculum. Admission to the university is handled through the Office of Admissions and Records, but those students who desire more specific information about a major should make an appointment with an academic adviser of that department or school. Each department or school of the college has one or more individuals who will advise prospective students about major requirements, curriculum, activities, careers, and opportunities. Transfer students may also discuss transfer credit and placement in courses at Southern Illinois University at Carbondale.

A student with special personal and professional goals which cannot be met by one of the traditional majors is encouraged to consider the resources available within the college and university and design a special major. Requirements and guidelines are listed elsewhere under *Special Major.*

Faculty of the college are engaged in research/creative activities concerning communications and the arts. They also provide consulting service and other community services to schools, newspapers, radio and television stations, museums, arts centers, businesses, and governments. They hold professional memberships and serve as officers in various local, state, national, and international organizations in the communications media and in the arts. A number of special events are presented each year, including lectures by noted artists, music performances, dramatic presentations, art and photography exhibits, and film showings.

The Broadcasting Service is also a part of the college. It operates WSIU(FM), a public radio station and WSIU(TV), Channel 8, a public television station, both located in Carbondale. It also operates a second public television station, WUSI (TV), channel 16, at Olney.

Administrative offices of the college are located in the Communications Building, which includes the McLeod Theater along with broadcasting facilities, film production facilities, and the office of the *Daily Egyptian.*

College of Education

DONALD L. BEGGS, *Dean*

Departments: Curriculum, Instruction, and Media; Educational Leadership; Educational Psychology; Health Education; Higher Education; Physical Education; Recreation; Special Education; Vocational Education Studies

The College of Education offers the following programs[1] leading to the Bachelor of Science degree:

Agricultural Education
Art
Biological Sciences
Botany
Business Education
Chemistry
Child and Family
Classics (To teach Latin)
Clothing and Textiles
Communication Sciences and Disorders
Early Childhood Education
Elementary Education
English
French
Geography
German
Health Education
History
Home Economics Education
Language Arts (English and Reading)
Mathematics
Music
Occupational Education
Physical Education
Physics
Political Science[2]
Recreation
Russian
Secondary Education[2]
Social Studies
Social Studies
Spanish
Special Education
Speech Communication
Zoology

[1]In addition to programs offered almost entirely within the College of Education, certain programs are offered in cooperation with the College of Liberal Arts (e.g., mathematics,) or with the College of Communications and Fine Arts (e.g., art, music), School of Agriculture (agricultural education), and the College of Science (e.g., biological sciences, chemistry).

[2]This is not an academic major. Persons planning to teach in secondary schools should refer to the curriculum, instruction, and media section of this catalog for a listing of academic majors and minors.

Preparation of teachers at all levels and in all areas of instruction in the public schools from preschool education through high school is the special function of the College of Education. In its graduate offerings the efforts of the College of Education include professional work for prospective college teachers and administrators and several specializations in elementary and secondary school administration and supervision.

For most undergraduate students preparing to teach in high schools, the subject-matter courses will be taken in the other colleges and schools of the University, and the professional preparation for teaching, including student teaching, will be taken in the College of Education. Graduates of the College of Education receive the Bachelor of Science degree.

Students who wish to become principals or supervisors in the public schools take graduate work in the Department of Educational Leadership. The department's major emphasis is on the graduate work, but it also participates in providing background for elementary and high school teachers. Likewise, students wishing to pursue a career in teaching or administration in colleges and universities take graduate work in the Department of Higher Education. The department does not offer an undergraduate major in higher education, but it provides courses for

undergraduate credit providing a broad background in higher education for elementary and high school teachers.

The College of Education, housed in the Wham Education Building, is the oldest unit of the University, which was orginally chartered as Southern Illinois Normal University.

Teacher Education Program

Southern Illinois University at Carbondale is fully accredited by the National Council for Accreditation of Teacher Education (NCATE) and by the State Teacher Certification Board, Springfield. The teacher education program is an all-university function administered by the dean of the College of Education. An advisory committee composed of faculty and students serves in a recommending capacity to the dean.

Teacher education programs, approved by the State Teacher Certification Board, are offered in elementary education, early childhood education, early childhood-preschool education, special education, secondary education majors and minors, and in majors which lead to the special certificate to teach K-12. The special education major offers specializations in education of the behaviorally disorderd, education of the mentally retarded, and education of the learning disabled.

Only those students who complete an approved teacher education program are recommended for certification and may receive a teaching certificate through the entitlement process. Further information and procedures for receiving the certificate are explained below under Certification.

ADMISSION POLICY

The College of Education admission policy shall be the same as that of the University. All qualified new students are admitted to the College of Education with a specific departmental major classification or as an unclassified student. The same policy applies for reentering students.

RETENTION POLICY FOR TEACHER EDUCATION PROGRAM

Advancement to the teacher education certification program requires that the following specific criteria be met.

A student is eligible to make formal application to the program with:

1. A minimum of 30 semester hours of completed work including Education 201;
2. An overall grade point average of at least 2.25 (4.00 scale);
3. Completion of GE-D 101 and GE-D 117, 118, or 119, and one additional English course (GE-C or Department of English) with a grade of *C* or better;
4. Completion with a minimum grade of *C* since entering ninth grade including work taken in college of:

a. four years of English and communication skills. Each three semester hour college composition or writing course equates to one year of high school English. At least three of the four years must be English;

b. two years of mathematics sufficient to include the course content of algebra I. Computer science courses may not be used to satisfy any part of this requirement;

c. two years of science. Courses from either the physical or biological sciences will be accepted toward this requirement;

d. two year of social studies.

Applications must be submitted in person and must be accompanied by verification that all prerequisites have been met. Students are responsible for submitting high school transcripts to the Office of Teacher Education at the time of application. Applications received through the mail will not be considered. Application forms, as well as information about the teacher education program, are available from the coordinator of teacher education services in the Office of Teacher Education in Wham Education Building, room 135. Students are encouraged to investigate

the feasibility of applying for a particular teaching field early in their undergraduate careers by contacting their adviser or the department in which they wish to specialize.

If a student's application is approved after being reviewed by the coordinator of teacher education services, the student is issued a membership card which entitles the student to begin work in the basic professional education courses which are prerequisite to the professional semester of student teaching. At the end of the first semester of membership, the department offering the student's major is requested to submit a recommendation as to whether or not the student should be retained in the program. Criteria for this recommendation are available from the department or the student's adviser. Failure to obtain approval prohibits the student from continuing with the professional education courses and could lead to suspension from the program. In order to remain in the program and complete the requirements for graduation and teacher certification, the student must attain a 2.50 grade point average in the major and receive departmental approval. Both of these requirements must be met before final clearance can be given for a student teaching assignment.

Students who are not able to meet the criteria of the teacher education program or their major department will be counseled about alternative programs.

Collegiate Warning and Dismissal in Teacher Education Program. Students who do not achieve an accumulative 2.25 grade point average in their major in any semester are subject to collegiate warning. Students who are on collegiate warning and do not earn a 2.25 grade point average in courses required by their major in a subsequent semester will be placed in a status of collegiate dismissal. Students registered in other colleges who are in the Teacher Education Program who do meet this requirement will be dismissed from the Teacher Education Program. A student who has been placed on collegiate dismissal may seek transfer to another program if the student has an overall grade point average at Southern Illinois University at Carbondale of 2.00 and is in good academic standing. Students who are placed on collegiate dismissal and have less than an overall 2.00 for work completed at Southern Illinois University at Carbondale but have not been suspended from the University will be placed in Undergraduate Academic Services.

DEGREE REQUIREMENTS

In addition to general education and major requirements, each degree candidate in a teacher education program must complete the course requirements listed below:

1. Four semester hours in health and physical education by taking GE-E 201 and two hours of GE-E 100-114. These courses should be selected as a part of the general education requirements.
2. A course in American history or government (GE-B 212 or 301 recommended.)
3. The United States and State of Illinois constitution examinations requirement. This requirement for continuing certification in Illinois may be met by taking GE-B 212 or 301, or History 300; by taking a course in American history or political science other than GE-B 212 or 301 or History 300 and passing the constitution test administered by the University; or by presenting written notification from another institution that a course in American history or government has been passed and that the tests have been passed on the constitutions of the United States and the State of Illinois.
4. GE-B 202 as a prerequisite for Education 301 in the professional education sequence. GE-B 202 should be selected as a part of the general education requirements.

5. GE-D 101 and GE-D 117, 118, or 119, and one additional English course (GE-C or English department) with a grade of *C* or better in each of the last two courses completed. This requirement is a prerequisite to admission to the professional semester.
6. The professional education sequence listed below. Each of the courses which are part of the program prior to the professional semester must be completed with a grade *C* or better as a prerequisite to admission to the professional semester. Students must receive a grade of *C* or better in Education 400 and 401 to receive the institutional recommendation for certification. Education 201 must be completed prior to admission to the teacher education program.

Professional Education Sequence 25

Decision Component

Education 201 1

Basic Professional Block

Education 301 2
Education 302 2
Education 303 2
Education 304a, b, c, d, e, f, g, h 2
Education 312[1] 1

Professional Semester[2]

Education 350 3
Education 400 4
Education 401 8

7. Illinois State Teacher Certification Board general education course distributions in: language arts, science, mathematics, social science, humanities, health, and physical education. Students having questions concerning whether their programs meet certification board requirements should discuss their concerns with their academic advisers.

[1]The following courses are approved substitutes for Education 312 as a part of the professional education requirements for the majors indicated: Music 304 and 306 for music majors; Speech Communication 230 and 390 for speech majors; and Communication Disorders and Sciences 105 and 493 for communication disorders and sciences majors.
[2]Concurrent registration in Education 350, 400, and 401 is required during the professional semester.

Certification

A student who is nearing completion of the teacher education program (usually during the last semester) can obtain the forms to make application for entitlement to certification for the State of Illinois from the Office of Teacher Education, Wham Education Building, Room 135. Upon completion of the application forms by the student, the certification staff will process the forms. When the student's program, including graduation clearance, is completed, the office will mail the completed forms to the student's permanent address for use in applying for certification through the student's future educational service region superintendent.

The State of Illinois issues through the entitlement process the Standard Elementary Certificate, Standard High School Certificate, Standard Special Certificate, or Early Childhood-Preschool Certificate to students who graduate from an approved teacher education program at Southern Illinois University at Carbondale.

Standard Elementary Certificate. Students planning to teach on the elementary level in the public schools of Illinois register in the College of Education. Requirements for entitlement to the State of Illinois standard elementary certificate may be through the completion of the early childhood (K-3) education program or the elementary education (K-9) program. For further information concerning these programs, see the sections of this catalog titled curriculum, instruction, and media and professional education experiences in Chapter 4.

Standard High School Certificate. Requirements for entitlement to the State of Illinois standard high school certificate and for entitlement to the standard special certificate may be met as explained in the section of this catalog titled curriculum, instruction, and media in Chapter 4. A listing of majors, minors, and other programs approved for certification entitlement purposes at Southern Illinois University at Carbondale is presented there. It is possible for a student to be registered in one of the colleges or schools other than the College of Education and to meet the state requirements for the standard high school certificate or the standard special certificate by using as electives certain prescribed professional education requirements in the College of Education.

Standard Special Certificate. Teaching all grades, kindergarten through grade 12, requires the standard special certificate. As noted above, requirements for entitlement to the standard special certificate may be met in the manner outlined in the section of this catalog titled curriculum, instruction, and media in Chapter 4. Teaching fields for which the standard special certificate is issued include physical education, special education, music, art, and speech pathology and audiology (now communication disorders and sciences).

Early Childhood-Preschool Certificate. Students planning to teach at the preschool level in public schools or other settings in Illinois register in the College of Education or in the College of Human Resources. The early childhood-preschool program was specifically designed to prepare future teachers of pre-kindergarten children. For further information concerning the program, see the section of the catalog titled curriculum, instruction, and media in Chapter 4.

College of Engineering and Technology

KENNETH E. TEMPELMEYER, *Dean*

Departments: Civil Engineering and Mechanics; Electrical Engineering; Mechanical Engineering and Energy Processes; Mining Engineering; Technology

The College of Engineering and Technology offers the following majors leading to the Bachelor of Science degree:

Engineering with specializations in: electrical sciences and systems engineering, engineering mechanics, mining engineering, and thermal and environmental engineering

Civil Engineering

Electrical Engineering

Engineering Technology with specializations in civil engineering technology, electrical engineering technology, and mechanical engineering technology.

Industrial Technology with specializations in industrial technology, industrial technology — occupational, and mining technology

Mechanical Engineering

Mining Engineering

Specific requirements are listed for the various majors in the next chapter. Three basic academic programs: engineering, engineering technology, and industrial technology serve students who have different career goals.

Engineering. Engineering is the profession in which knowledge of the mathematical and natural sciences gained by study, experience and practice is applied

with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of people. Engineers are primarily concerned with the design and fabrication of new products and structures, converting new ideas into reality, the practical solution of human problems, and pushing back the frontiers of technical knowledge. Students of engineering should have interests and skills in mathematics and science and possess a high interest in problem solving.

Engineering Technology. Engineering technology is that part of the technological field in which engineering knowledge and scientific methods are combined with hands on technical skills to support engineering activities. It lies in the occupational spectrum between that of the technician and the engineer with specific responsibilities depending upon the nature of the training and requirements of the job but lying more closely to engineering. Graduates are prepared to deal with technical and production problems, and to apply their knowledge to such activities as development, design, construction, maintenance and operational problems.

Industrial Technology. Industrial technology is a management-oriented technical profession that is built upon a sound knowledge and understanding of materials, processes, technical management, and human relations; and a proficiency level in the physical sciences, mathematics, and technical skills to permit the graduate to capably resolve technical-managerial and production problems. Graduates of this program are prepared for positions in processes, safety, quality control, supervision, robotics, methods analysis, and computer-aided manufacturing.

Admission Policy

The following requirements apply to students seeking admission to engineering with specializations in electrical sciences and systems engineering, engineering mechanics, thermal and environmental engineering, and mining engineering, as well as the majors in civil engineering, electrical engineering, mechanical engineering, and mining engineering. They do not apply to students applying for admission to engineering technology or industrial technology.

FRESHMEN

Beginning freshmen must rank in the top quarter of their high school graduating class and have an ACT standard composite score of 18 to 22 or rank in the top half of their graduating class and have an ACT composite score of 23 or higher. In addition, students must have completed prior to high school graduation the following courses before they will be allowed to enroll in an engineering major: three years of English (a fourth year is recommended); three and one-half years of mathematics in which there are two years of algebra, one year of geometry, and one-half year of trigonometry and two years of science of which it is recommended there is one year of chemistry and one year of physics.

Students who do not meet these requirements but do meet the regular University admission requirements will be admitted provisionally to the college and be advised as to an appropriate program during the first year. These students may be admitted to one of the technology programs in the college but cannot change their major to engineering until they have satisfied the requirements for transfer students as stated below.

TRANSFER STUDENTS

Transfer students who have completed fewer than twenty-six semester (thirty-nine quarter) hours must have an overall *C* average and meet the admission requirements of beginning freshmen. Students who have completed twenty-six semester hours or more must have an overall average of 2.50 (4.00 scale) to be admitted without a record review as detailed below. A student's grade point

average is determined by computing all earned grades, including repeated courses. Students must also complete or have completed successfully the courses specified in the retention policy of the College of Engineering and Technology before they can enroll in upper division engineering courses.

Students who have earned twenty-six semester hours or more of transfer credit and have a grade point average of 2.00 to 2.49 will have their records reviewed by the College of Engineering and Technology. These students should arrange to have their ACT scores and high school records submitted to the Office of Admissions at the time they apply for admission to the University. These students will initially be admitted provisionally to the college to assist them in completing other procedures which require admission to the University such as applying for housing and financial assistance. However, students must understand they may not be approved for final admission to the engineering major and it may be necessary for them to change their program of study.

SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE STUDENTS

Students currently enrolled at Southern Illinois University at Carbondale who have not been admitted to an engineering major must meet the requirements described above to transfer into one of the engineering programs.

INTERNATIONAL STUDENTS

International students must meet admission requirements comparable to those of native students. While admission credentials such as ACT scores and class rank are not generally submitted by international students, students do submit credentials which reflect their achievements in subject areas such as English, mathematics, and science. Therefore, beginning freshmen and transfer students with less than twenty-six semester hours will be required to submit records which reflect above average achievements in these desciplines in order to be admitted to an engineering program. Transfer students who have earned twenty-six semester hours or more of transfer credit will be required to have a 2.50 or camparable grade point average. International students will be required to complete succesfully courses identified in the retention policy of the College of Engineering and Technology before they will be permitted to take upper division engineering courses.

Students who meet minimum University admission requirements but do not meet those requirements for entrance to an engineering program will be granted provisional admission to the college and be advised as to an appropriate program during the first year. These students must satisfy the requirements previously described for native students in order to transfer to an engineering major.

Because interest in engineering classes continues to be exceedingly high, it may be necessary to close admission to selected engineering majors without advance notice.

ENGINEERING TECHNOLOGY AND INDUSTRIAL TECHNOLOGY

Admission policies to the engineering technology and industrial technology majors have not changed. However, it is recommended that all students considering entrance to these programs should have completed four years of English, three and one-half years of mathematics in which there are two years of algebra, one year of geometry, and one-half year of trigonometry, and two years of science which includes one year of chemistry and one year of physics.

Retention Policy

A student in the College of Engineering and Technology must successfully complete the following requirements to (1) advance to the upper division courses (300 or 400 level courses) and (2) remain in the college:

Engineering

1. To advance to upper division courses and be classified under a specific departmental major, a pre-engineering or transfer student must have completed the following five courses or their accepted equivalencies with a minimum grade of *C* in at least four of the five courses: Mathematics 150, 250, and 251; Chemistry 222a; Physics 205a.
2. To remain in the college, students are subject to the additional requirement of maintaining a 2.00 accumulative grade point average in all of their major courses. Major courses in engineering used to determining the major grade point averages are courses offered as engineering, civil engineering, engineering mechanics, electrical engineering, mining engineering, and mechanical engineering.

Engineering Technology

1. To advance to upper division courses and be classified under a specific departmental major, an engineering technology or transfer student must have completed the following four courses or their accepted equivalences with a minimum grade of *C* in at least three of the four courses: Mathematics 111 and 150; Engineering 222; and Chemistry 115 or Physics 203a.
2. To remain in the college, students are subject to the additional requirement of maintaining a 2.0 accumulative grade point average in all of their major courses. Major courses in engineering technology used in determining the major grade point averages are courses offered as engineering technology.

Industrial Technology

1. To advance to upper division courses and be classified under a specific departmental major, an industrial technology or transfer student must have completed the following four courses or their accepted equivalencies with a minimum grade of *C* in at least three of the four courses: Mathematics 111; Physics 203a; Industrial Technology 105; and Computer Science 212.
2. To remain in the college, students are subject to the additional requirement of maintaining a 2.00 accumulative grade point average in all of their major courses. Major courses in industrial technology used in determining the major grade point averages are courses offered as industrial technology.

Grades earned at an institution whose credit is accepted by Southern Illinois University at Carbondale will be calculated for entrance to and retention in the engineering or technology programs but will not be used in a student's university average or the college major average at Southern Illinois University at Carbondale. Engineering and technology representatives will determine whether courses completed at other institutions are equivalent to those courses required for retention.

Collegiate Warning and Dismissal. Students who do not achieve an accumulative 2.00 grade point average in their major in any semester are subject to collegiate warning. Students who are on collegiate warning and do not earn a 2.00 grade point average in courses required by their major in a subsequent semester will be placed in a status of collegiate dismissal. A student who has been placed on collegiate dismissal may seek transfer to another university program if the student has an overall Southern Illinois at Carbondale grade point average of 2.00 and is in good academic standing. Students who are placed on collegiate dismissal and have less

than an overall 2.00 for work completed at Southern Illinois University at Carbondale but have not been suspended from the University will be placed in Undergraduate Academic Services.

Readmission to the College

Students dismissed from the College of Engineering and Technology for failing to maintain a grade point average of 2.00 in the major courses may seek readmission to the college after a minimum two semesters interruption but must furnish tangibile evidence that satisfactory progress in the program can be made in the future. Satisfactory performance in a special problems course, 492, will not be solely considered as sufficient evidence to justify readmission.

Course Sequence

It is important that required courses in the program be taken in the proper sequence. Sequence guidelines are available from the college advisement office and the departmental offices. Courses on the 300 and 400 levels are reserved for juniors and seniors. Students who have not completed the courses specified in the above retention policy will not be allowed to take 300 or 400 level courses in their program area without approval of the department chairperson, unless they have received provisional admission status as described in the section *Transferred Credits.*

Course Withdrawals

Students who withdraw from a College of Engineering and Technology course after the fourth day of the Fall semester will not be permitted to take the course the following Spring semester. Students who withdraw from a College of Engineering and Technology course after the fourth day of the Spring semester will not be permitted to take the course the following Fall semester.

Transferred Credits

All transfer credit from an institution whose work is acceptable at Southern Illinois University at Carbondale, both two-year and four-year, will be used in fulfillment of the program retention standards given above. Equivalencies for the retention standard courses will be determined by the advisement center, office of the dean, College of Engineering and Technology.

Students who are attending a public Illinois community college and contemplating application to the College of Engineering and Technology should obtain program information which has been prepared for their particular community college.

Transfer students who have not completed all of the specified courses listed in the section *Retention Policy* will be admitted to the college provisionally if all of these specified courses can be completed in the first year at Southern Illinois University at Carbondale.

Qualified candidates for the Capstone Program are accepted with majors in industrial technology. The Capstone Program is described earlier in this chapter.

Location

Administrative offices of the college are located in the Technology Building near Lake-on-the-Campus.

Graduate School

BARBARA C. HANSEN, *Dean of the Graduate School*

Southern Illinois University at Carbondale is a comprehensive university with an extensive offering of graduate programs and a significant commitment to an

overall program of research. More than 3,400 graduate students pursue advanced study and research under the leadership and direction of some 900 graduate faculty members. The Graduate School offers master's degrees through fifty-eight programs, the specialist degree (sixth year) in three areas of education, and the doctoral degree through twenty-two programs. The Ph.D. program in education has concentrations in nine different areas.

The following graduate degrees are offered: Master of Accountancy, Master of Arts, Master of Business Administration, Master of Fine Arts, Master of Music, Master of Public Affairs, Master of Science, Master of Science in Education, the Specialist degree offered in the field of education, the Doctor of Philosophy, the Doctor of Business Administration, and the Doctor of Rehabilitation.

The Graduate School is fully accredited by the North Central Association of Colleges and Secondary Schools, and specific programs have been accredited by appropriate state and national accrediting associations.

A separate catalog describing admission and graduation requirements for the various programs in the Graduate School may be had by writing to the Graduate School, Southern Illinois University at Carbondale, Carbondale, Illinois 62901. An application for admission to graduate study may be requested from the Graduate School.

College of Human Resources

Seymour Bryson, *Dean*

School of Social Work with academic programs in black American studies and social work; Center for the Study of Crime, Delinquency, and Corrections; Rehabilitation Institute.

The College of Human Resources offers the following majors leading to the Bachelor of Science degree:

Administration of Justice
Social Work

The specific requirements for each of these majors are listed in the next chapter.

Qualified candidates for the Capstone Program are accepted with majors in administration of justice. The Capstone Program is described earlier in this chapter.

Minors are offered in administration of justice and black American studies.

School of Law

Dan Hopson, *Dean*

The school offers a three-year program leading to the Juris Doctor (J.D.) degree. Candidates must satisfy the entrance requirements, fulfill the residence requirements, satisfactorily complete a total of 90 semester hours for credit and take all required courses. Students may, with permission from the School of Law and the relevant graduate program director, obtain joint JD/MBA, JD/MPA and JD/Master of Accountancy degrees. Approximately 120 entering freshman will be admitted in the fall of 1984.

The law school has received accreditation from the American Bar Association and is a member of the Association of American Law Schools. During the summer of 1981 the school occupied new and contemporary facilities housing classrooms, student lounges, administrative offices and the library, as well as a courtroom and large, in-house clinic offices.

The faculty and student body of the school are of the highest quality, and its

curriculum is designed to inculcate fundamental legal concepts and skills which are the hallmarks of the legal profession. In addition to the Socratic — casebook method, other teaching methods, including clinical, are utilized as the subject matter requires. The School of Law catalog can be obtained by writing to the School of Law.

College of Liberal Arts

JAMES F. LIGHT, *Dean*

Departments: Anthropology; Computer Science; Economics; English; Foreign Languages and Literatures; Geography; History; Linguistics; Mathematics; Philosophy; Political Science; Psychology; Religious Studies; Sociology

The College of Liberal Arts offers the following majors leading to the Bachelor of Arts and Bachelor of Science degrees. Minors are possible in most of these areas. For exceptions, see next chapter.

African Studies[1]
Anthropology
Asian Studies[1]
Comparative Literature[1]
Computer Science
Earth Science[1]
Economics
English
Foreign Languages and Literatures
Chinese[1]
Classical Civilization[1]
Classics
East Asian Civilizations[1]
French
German
Greek[1]
Japanese[1]
Latin[1]
Russian
Spanish
Geography
History
Linguistic
Mathematics
Museum Studies
Paralegal Studies for[1] Legal Assistant
Philosophy
Political Science
Psychology
Religious Studies
Sociology
Speech Communications[2]
Uncommon languages[1]

[1]Minor only.
[2]Liberal arts major, not professional major.

The College of Liberal Arts provides instruction in basic subject matter courses of General Education; majors in twenty subject areas, graduate programs for students pursuing master's and Ph.D. degrees, preprofessional curricula for specialized schools such as law and courses offered through the Division of Continuing Education. The Bachelor of Arts or Bachelor of Science degree is granted to students who fulfill requirements for graduation from the College of Liberal Arts. The courses of study outlined by the departments determine the degree awarded. Students in the College of Liberal Arts may also prepare directly for teaching at the secondary level by including in their studies certain professional courses offered by the College of Education.

Through the diversified offerings of the College of Liberal Arts, students develop the ability to seek and weigh evidence and to think critically and independently; they gain a fundamental understanding of the ever changing social, political, and physical environment, and a deeper understanding of people, cultures, art, and literature.

ACADEMIC REQUIREMENTS

To receive a degree from the College of Liberal Arts students will be expected to fulfill the following:

1. University requirements including those relating to General Education, residency, total hours completed, and grade point average.
2. College of Liberal Arts requirements of one year of a foreign language; one

course in mathematics or computer science in addition to four hours of General Education mathematics; one course in English composition in addition to five hours of General Education composition.

3. Completion of an approved major in the College of Liberal Arts.
4. At least 40 hours of course work at the 300 or 400 level.

Liberal arts major requirements provide for a large number of elective courses, giving students maximum flexibility in planning their overall program of study at the University. To assist students in planning their programs, the college maintains an academic advisement office in Faner Hall 1229, as well as faculty advisers in each department. Students are urged to consult these adacemic advisers on how they can best use their electives to fulfill their intellectual interests and to prepare for particular career opportunities. A carefully planned minor or second major field can lead to additional career opportunities for the liberal arts major. Students who are planning to attend graduate school or one of the professional schools such as law or medicine should consult with their advisers on how best to plan their undergraduate curriculum.

PRE-LAW

The College of Liberal Arts has a pre-law advisory committee to help students plan a useful, interesting curriculum to improve the skills important for the study of law. This committee is made up of faculty members of various University units who hold law degrees or who have particular expertise in fields important to law and pre-law preparation. The committee sponsors a Pre-Law Night each fall, where opportunities are presented for open discussion of undergraduate curriculum and the law school admission process. These discussions are led by students and faculty of the Southern Illinois University at Carbondale School of Law. A mock Law School Admission Test is given twice a year under regular test conditions.

The pre-law student may choose any major course of study. Among courses especially recommended for pre-law students is Liberal Arts (LAC) 105, Law in American Society, a special interdisciplinary course offered each fall semester. Students who are interested in pre-law may discuss academic programs and plans with pre-law advisers in the Liberal Arts Advisement Office.

School of Medicine

Richard H. Moy, *Dean and Provost*

Southern Illinois University School of Medicine was established in 1970 in response to a need in Illinois for increased opportunities for education in health fields and the more encompassing need for improvements in the health care delivery system. To have the broadest impact possible on health care in central and southern Illinois, the school is primarily engaged in training men and women who will become physicians. It also emphasizes continuing education, is a center of health care planning and expertise, and conducts research in basic sciences and clinical medicine.

The first class of forty-eight students was admitted for instruction in June, 1973; classes have graduated yearly since 1975. Currently, 72 students are admitted each year. Preference is given to applicants from central and southern Illinois intending to practice medicine in the state. Inquiries on admission should be addressed to the Committee on Admissions, Southern Illinois University School of Medicine, P.O. Box 3926, Springfield, Illinois 62708.

The four-year competency-based curriculum leads to the M.D. degree. Students matriculate in August. The first twelve months are conducted on the campus of Southern Illinois University at Carbondale and emphasize instruction in the

sciences basic to medicine. Significant clinical instruction occurs during the first year and increases considerably in the second year, at Springfield. The last two years in Springfield are primarily clinical along with time spent in medical humanities and non-clinical electives.

Carbondale facilities include extensive and well-equipped laboratories at Southern Illinois University at Carbondale, Memorial Hospital of Carbondale, and public and private clinical facilities. In Springfield, St. John's Hospital and Memorial Medical Center, each having about 700 beds, are utilized. The Medical Instructional Facility in Springfield accommodates 200 medical students.

College of Science

RUSSELL R. DUTCHER, *Dean*

Departments: Botany; Chemistry and Biochemistry; Geology; Microbiology; Physics and Astronomy; Zoology

The College of Science offers majors, and in most cases minors, leading to the Bachelor of Arts and Bachelor of Science degrees in the following fields of study:

Biological Sciences
Botany
Chemistry
Geology
Microbiology
Physics
Mathematics
Physiology
Zoology

A minor in earth science is also offered.

Included in the curriculum of each department are survey courses that provide an introduction to the subject matter of that discipline while fulfilling the General Education requirements of Southern Illinois University at Carbondale. These courses assist all students to develop an understanding and appreciation of the impact of science on one's daily life. Elementary and advanced courses are provided to prepare students for professional employment or entrance into professional and graduate schools. Graduate training is also provided by each of the science departments leading to the M.S. or Ph.D. degree. The research interests of the faculty are extremely diverse.

Students in the College of Science may prepare for teaching at the secondary level by fulfilling the additional requirements of the College of Education. The Bachelor of Arts or the Bachelor of Science degree is granted to students who fulfill the requirements for graduation as given and the requirements of the departments in which the students declare their majors.

Each department has specific requirements for students to major in the selected field of interest, but the College of Science has some minimum general requirements listed below.

ACADEMIC REQUIREMENTS

None of these general academic requirements may be satisfied by taking the required courses on a Pass/Fail grading basis.

Biological Sciences. Six semester hours in courses offered by the biological sciences departments in the college, with the proviso that this requirement cannot be satisfied in whole or in part by General Education courses, but may be substituted for the latter in meeting the General Education requirements.

Foreign Language. The foreign language requirement can be met by one of the following: (a) passing an 8-hour 100-level sequence in one language; (b) by earning

8 hours of 100-level credit in one language by proficiency examination; or (c) completing three years of one language in high school with no grade lower than *C*. Tests administered during advisement of new students will determine whether proficiency credit is allowable.

A student whose native language is not English may use the native language to satisfy part or all of the science foreign language requirement at Southern Illinois University at Carbondale. If the language is presently taught at Southern Illinois University at Carbondale, academic credit may be earned. If the language is not presently taught at Southern Illinois University at Carbondale, no credit is given, but partial or full satisfaction of the science foreign language requirement may be granted if the student's major department so recommends. A student whose native language is English but who has learned another language not taught at Southern Illinois University at Carbondale may qualify without credit for partial or full satisfaction of the science foreign language requirement under certain circumstances, including formal recommendation by the student's major department and availability of an examiner and examination materials within the Department of Foreign Languages and Literatures. For information, the student should consult the College of Science advisement center.

Mathematics. The mathematics requirement can be met by (a) passing Mathematics 108 or 109 or its equivalent or Mathematics 140, or (b) completing three years of high school mathematics with no grade lower than *C* and achieving a score on the University's Mathematics Placement Test which allows the student to enroll directly in Mathematics 150.

Physical Sciences. Six semester hours in courses offered by the physical science departments of the college, with the proviso that this requirement cannot be satisfied in whole or in part by General Education courses, but may be substituted for the latter in meeting the General Education requirements.

General Requirements. At least 40 hours of the student's 120 hours for graduation must be at the 300 or 400 level. The total may include transfer credit for courses judged by the department involved to be equivalent to its upper division courses. For transfer students submitting only the last year in residence, at least 24 of these must be at the 300 or 400 level.

PREPROFESSIONAL COURSES

A student planning a professional career in any of the following fields should register in the College of Science immediately: dentistry, medicine, optometry, physical therapy, podiatry, pharmacy, veterinary science. Preprofessional students should refer to the baccalaureate degree section in this chapter.

School of Technical Careers

HARRY G. MILLER, *Dean*

The School of Technical Careers is unique among institutions of higher learning in Illinois. The school offers technically-oriented academic programs which lead to the Associate in Applied Science and Bachelor of Science degrees.

The educational offerings of the school include:

1. Associate degree programs structured for entry of new students or free flow of students from other institutions or from other units within the University;
2. Post- or extra-associate offerings in occupational areas related to these programs; and

3. Baccalaureate programs for students with career goals in selected technical/professional areas.

Currently, the School of Technical Careers offers majors leading to the Associate in Applied Science degrees. These are:

Allied Health Career Specialties
Architectural Technology
Automotive Technology
Aviation Flight
Aviation Maintenace Technology
Avionics Technology
Commercial Graphics — Design
Construction Technology — Building
Dental Hygiene
Dental Technology
Electronic Data Processing
Electronics Technology
Law Enforcement
Mortuary Science and Funeral Service
Nursing
Photographic Production Technology
Physical Therapist Assistant
Radiologic Technology
Respiratory Therapy Technology
Secretarial and Office Specialties
Tool and Manufacturing Technology

A number of these majors offer third year post-associate specializations to provide the student who holds the associate degree with additional competencies.

On the baccalaureate level, the School of Technical Careers offers the following majors leading to the Bachelor of Science degree:

Aviation Management
Career Development
Consumer Economics and Family Management
Electronics Management
Fire Science Management
Health Care Management
Interior Design

Qualifed candidates for the Capstone program are accepted into most of the baccalaureate programs. The Capstone program is described earlier in this chapter.

Requirements for associate and baccalaureate programs are listed in Chapter 4 of this bulletin.

Information on the school, its programs, and course offerings is available through the office of the dean, School of Technical Careers, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Undergraduate Academic Services

Undergraduate Academic Services includes the following programs:

Center for Basic Skills
Pre-Major Advisement Center
Special Majors
Talent Search
University Honors
University Studies Baccalaureate
Upward Bound

Undergraduate Academic Services provides all undergraduate students a variety of programs designed to enhance and support the quality of academic life at Southern Illinois University at Carbondale. This unit assists students who are undecided as to their major, those who desire enriching and specially designed curricula, and those who need academic support services. The Bachelor of Science or Bachelor of Arts degree is offered through the University Studies Baccalaureate program. Students interested in Undergraduate Academic Services should contact the director.

Center for Basic Skills

The Center for Basic Skills offers special academic assistance through laboratory instruction, small group sessions, workshops, seminars, and individual tutorials in study/learning skills, speech communication, most freshman-level content courses, and personal and career counseling and guidance. In addition, a course titled Comprehensive Learning Skills is offered through the center. This course

offers study/learning skills needed to pursue an education at Southern Illinois University at Carbondale. Although participation for some students may be required, any student is welcome to take advantage of this special service at no cost.

Pre-Major Advisement Center

The Pre-Major Advisement Center is the academic home of students who have not declared a major. The advisers have a wide acquaintance with the many programs offered by the University and are ready to help students select a suitable area of specialization.

Special Major

A student whose academic needs are not met by existing baccalaureate programs may arrange a special baccalaureate degree program in lieu of a standard curriculum. In consultation with a faculty sponsor, the student draws up a program for which the baccalaureate degree will be awarded, with final approval from the director of Undergraduate Academic Services. The special area program should have structure, organization, and a rationale consistent with the student's post-baccalaureate plans. The special major must include all University and unit graduation requirements.

Examples of special majors which have been developed: environmental systems design; broadcast management and sales; community health; juvenile services and corrections; physiological microbiology; studies in humanism; creative arts; general environmental studies; Asian studies; biological marketing; museum studies. Interested students should confer with the director of Undergraduate Academic Services.

Talent Search Center

The Talent Search Center is a federally funded project and consortium of twenty-three institutions of higher education cooperating to identify needs and motivate academically capable area youth and to assist them to continue, renew, or persist in pursuit of an education and related career.

To arrange for any of the individual or group services provided by the Talent Search Center, call, write, or visit the center located at 910 South Wall, Carbondale, Illinois, 62901.

University Honors Program

The University Honors Program is a University-wide undergraduate program designed to offer unique educational experiences to participating students. The program includes making available small sections of large classes, special seminars, independent studies, and other methods of enriching the education of its members, who are designated University Scholars.

At the time of graduation, an indication of participation in the program is made on the diploma and transcript for students who complete all requirements.

The director of honors opportunities is aided by the Honors Council and by the Council of University Scholars in administering the program.

The University Honors Program also oversees, publicizes, and coordinates all campus award competitions and some internship and travel/study plans. The director of honors opportunities seeks out special educational opportunities for students as a further way of offering more challenging and more interesting educational opportunities. Students with special educational needs are encouraged to discuss their plans with the director of honors opportunities.

Admission and retention information for University Scholars is found in chapter 2.

University Scholars may complete the General Education requirements of the

University by enrolling in advanced courses in departments which offer General Education courses. Individual options may be exercised which fulfill the spirit of General Education requirements, but, to challenge the University Scholar, may depart from standard University requirements.

Baccalaureate degrees for University Honors Program participants are awarded through the regular degree granting units.

Inquiries about the program should be addressed to the director of honors opportunities.

University Studies Baccalaureate

In the University Studies Program students pursue either a Bachelor Arts or Bachelor of Science degree through an individually designed, broad based curriculum rather than a traditional specialization. The program accommodates multidisciplinary and non-traditional approaches to education and to related career and life-styling.

To determine eligibility for the University Studies program as well as to explore specific program possibilities, students should consult the director, undergraduate Academic Services, or the program coordinator.

Upward Bound

This as a support program which identifies and recruits seventh to twelfth grade students in specific areas of southern Illinois who have the potential for serious academic work but who are insufficiently motivated. The program provides developmental, personal, and academic opportunities for underprivileged students who might not otherwise see themselves as future college students. Persons interested should direct inquires to the director, Upward Bound.

Other Academic Activities

Library Affairs

Morris Library, named after the late Delyte W. Morris, University president from 1948 to 1970, is an eight-level building which contains approximately 1,600,000 volumes, some 15,000 current periodicals and serials, and 1,850,000 units of microforms. Collections of government documents, maps, films, framed art prints, and phonograph records exist as well. With the exception of those in the special collections, most books and journals are arranged on open shelves and are accessible for browsing.

Morris Library houses four subject divisions (education and psychology, humanities, science, and social studies), a reserve reading room, learning resources service, special collections, and the undergraduate library. Microtext reading equipment is available in each subject division and the undergraduate library; the sound recording collection and listening equipment are provided in the humanities division. A central card catalog, identifying most of the collection, is located on the first floor; as is the central circulation desk where materials are checked out, using an automated circulation system. The browsing room, located on the first floor, contains recent books of a popular nature to provide recreational and avocational reading. Coin-operated photocopying machines are available to patrons on each floor.

The undergraduate library, located on the first floor, contains a collection of some 95,000 volumes that are considered basic to the undergraduate curriculum. A professional staff is available to provide special attention to the needs of undergraduate students and assist them in finding the information they want in a universe of materials as large and complex as a research library.

An on-line bibliographic search service offers access to over 100 machine-

readable data bases which may be searched via computer terminals. Reference librarians in each subject division are available to aid the researcher in developing a search strategy to obtain computer-produced bibliographies on a variety of topics.

Morris Library is a member of the Illinois Library Computer System (LCS), which provides on-line circulation system to participating libraries and supports computerized interlibrary loan activity among academic libraries in order to promote and enhance resource sharing on a state-wide basis.

Learning Resources Service, located in the basement of Morris Library, provides a broad range of instructional support services that seek to enhance student learning through the creation of outstanding instruction. The Learning Resources Service is divided into three units, each designed to provide specific instructional support services. The instructional development unit consists of faculty members who are available to faculty and teaching staff for consultation on the teaching-learning process. This staff works with faculty in the systematic analysis, design, and evaluation of instruction. The media services unit provides media support to faculty through the film library, photographic and graphics production, and the self instruction center, where students can utilize audio-visual media designed to support classroom instruction. The student media design laboratory, also found within the self instruction center, enables students to produce instructional media for classes, projects, and student teaching experiences. The campus services unit provides and maintains audio-visual support for the campus as a whole. Professional assistance is available when utilizing learning resources service, and services are provided free or at a nominal cost.

Special collections, on the second floor of Morris Library, maintains the rare books collection, manuscripts and University archives. It contains important research collections in American and British expatriate literature, twentieth century philosophy, proletariat theatre, the Irish literary renaissance, and press freedom. The use of these non-circulating materials is restricted to those doing research, but others are encouraged to visit the area and view the numerous exhibits. The major editorial projects, The Center for (John) Dewey Studies and the Ulysses S. Grant Association, compile, edit, and publish the works of these individuals.

Credit courses in bibliographic instruction, library use, and information retrieval are offered on a regular basis and a wide range of information and orientation brochures and materials, as well as a multi-media slide/tape presentation, are available.

The library faculty and staff recognize the complexity involved in using a research library and are eager to help students, faculty, staff, and others in satisfying their information needs.

Division of Continuing Education

The Division of Continuing Education expands the University's educational mission beyond regular course offerings and campus boundaries. The division's off-campus credit programs, the on-campus evening and weekend program, non-credit classes, workshops and conferences, the individualized learning program, the contractual services program, the travel/study program, and the Touch of Nature Environmental Center offer the University's resources to a variety of groups at selected sites.

Off-Campus Credit. Off-Campus credit programs are designed to meet the educational needs of working adults or those who cannot travel frequently to the Carbondale campus to work toward their degrees. Faculty teaching off-campus courses are approved by the appropriate department. Graduate courses in

agriculture, education, engineering, and rehabilitation administration, as well as a variety of upper division undergraduate courses are offered at various locations throughout Illinois. An undergraduate degree program in University Studies is available to students at selected, off-campus sites.

Evening and Weekend Program. The evening and weekend program provides individuals within commuting distance of the Carbondale campus the opportunity to take up to 26 undergraduate hours of college work after 4 P.M. and on weekends. Tuition is the same as all other undergraduate courses, but students in the program pay reduced fees.

Individuals who possess a high school diploma or GED certificate and who are not enrolled in Southern Illinois University at Carbondale during the twelve months prior to application for the Evening and Weekend Program are eligible for admission. Students may take up to eight hours of credit during fall and spring semesters and five hours during summer session. The evening and weekend program office is open one evening a week during registration periods for adults who wish to enroll or inquire about the program.

Individualized Learning. Individuals who cannot attend classes at scheduled times may wish to enroll in an individualized learning course. Such courses are designed to be completed by the students at their own pace and time and, in many instances, in their own home. All courses in the individualized learning program are developed by University faculty and approved for academic credit. Occasionally such courses utilize the broadcast resources of WSIU-TV.

Contractual Services. The contractual services office provides specialized educational services to groups, organizations, governmental agencies, and businesses on a cost-recovery basis. These services are provided regionally, nationally, and internationally.

Travel/Study Program. Travel/study courses take place during intersession as well as during the summer months. Students must register four to six months prior to the start of the course and may earn graduate or undergraduate credit depending upon the nature of the course. Approximately ten offerings are available during each academic year, ranging in length from one week to one year. Courses are taught by full-time faculty of Southern Illinois University at Carbondale and are offered worldwide. Most travel/study courses do not require a specialized foreign language background.

Conferences and Adult Education Courses. Conferences, workshops, seminars, and symposia in virtually every field of study are conducted either on or off campus, at the most convenient site for participants. The division assists with all aspects of program development and implementation, including identification of the clients, design of the program, selection of the facility and final evaluation and report. Major emphasis is placed upon utilizing the campus for the annual national conferences and conventions of professional and specialized organizations.

Adult education non-credit courses feature instruction by University faculty, as well as carefully selected specialists from business, industry, and other professions. A spectrum of educational opportunities are available to residents of southern Illinois, including vocational and technical classes and general education offerings in the arts and humanities. Continuing Education Units (CEUs) are available for many of the conferences and adult education coures offered by the division.

A special opportunity is offered to local residents of the southern Illinois region through the community listener's program. With the approval of the instructor,

community members may for a modest fee sit in on courses that are a part of the undergraduate curriculum.

Touch of Nature Environmental Center. The Touch of Nature Environmental Center is a three thousand acre facility located eight miles southeast of Carbondale on Little Grassy Lake. It offers credit and non-credit programs serving students, University faculty, and community residents. Programs of the center include a challenge wilderness program for children and adults, recreational programs for the handicapped, emergency and rescue training, human enrichment courses, and environmental workshops for high school students.

Its newly remodeled facilities enable the center to host programs for business groups, educational organizations, and the general public. In addition, the center serves as a field site for the Departments of Botany, Forestry, Recreation, Special Education, and Zoology.

Military Programs

The Office of Military Programs is the central administrative unit for Southern Illinois University at Carbondale's various programs for military personnel. Currently, baccalaureate programs are offered through the College of Education, the School of Technical Careers, and the College of Engineering and Technology. The office serves as the principal point of contact and represents the University with external agencies in matters pertaining to educational programs at military bases. For additional information refer to the section on student work and financial assistance in this chapter and to Capstone Program and credit granted for military experiences in Chapter 2. Additional information may also be found in chapters 3 and 4 of the academic unit descriptions and majors. Students interested in admission should consult the Southern Illinois University at Carbondale base representative on the appropriate military base.

Aerospace Studies — Air Force ROTC

Aerospace Studies offers a two-year and a four-year program which are open to both men and women, leading to a commission in the United States Air Force. The four-year program is divided into the General Military Course (GMC), covering the freshman and sophomore years, and the Professional Officer Course (POC), covering the last two years. Students qualify to enter the two-year program at the POC level by attending a six-week field training course during the preceding summer. Cadets must complete a course in English composition during GMC membership.

The GMC prepares students for the POC and provides them with an education for space age citizenship of long range value whether they remain civilians or become officers in the U.S. Air Force. The courses of the POC are designed to provide the basic knowledge, understandings, and experiences which are required to become an effective junior officer in the modern air force. The student learns about the wide range of USAF career specialities open and has an opportunity to request duty in those fields where qualified. Those qualified as pilots, who do not already fly, receive 13 hours of flying training plus ground school instruction during their final year before graduation.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for full scholarships for their remaining years at the University. In addition to full tuition and fees, the scholarship provides a monthly tax-free subsistence allowance. Also, two-year AFROTC and State of Illinois (Senate Bill 381) scholarships are available on a competitive basis. Federal scholarship recipients must agree to successfully complete at least one semester of instruction in a major Indo-European or Asian language prior to commissioning.

In addition to the courses offered for academic credit, Aerospace Studies sponsors related extracurricular activities. The Aerospace Club is open to all members of the student body. The Arnold Air Society, a national honorary service organization, is open to selected AFROTC cadets. Membership in the Angel Flight, an auxiliary of the Arnold Air Society, is open to selected undergraduates. Angel Flight assists with community and campus service-oriented projects. The Black Phantom Drill Team is open to selected AFROTC cadets on a competitive basis. Members participate in local community events and in selected drill competition meets. The Air Commando Unit is open to all members of the GMC. Members specialize in outdoor training, exercises such as survival, first aid, navigation, and mountaineering.

Further information may be obtained from Aerospace Studies, 807 South University Avenue, 453-2481.

Army Military Science — Army ROTC

The senior army military science program offers a progressive adventure-filled two-year and four-year program, for both men and women designed to teach students the leadership and management skills needed to pursue an exciting career in the United States Army. The four-year program is divided into the basic course, covering the freshman and sophomore years, and the advanced course, covering the junior and senior years. Students qualify for direct entry into the advanced course level (two-year program), by completing a six-week basic leadership practical at Fort Knox, Kentucky.

Veterans, National Guard, or army reserve personnel, students who have completed the basic course, and students who have completed three or more years of junior ROTC may also qualify for entry into the advanced ROTC course.

The basic course prepares the students for the advanced course and provides them with an education in citizenship, basic leadership and management skills, and personal enrichment experiences of long range value regardless of their future occupations. The advanced course is designed to provide basic knowledge, encompassing a wide range of subjects dealing with organizational and managerial leadership to the United States Army military history. The understandings and experiences derived from these courses and adventure training exercise are required to enable a student to grow into an effective junior officer in the U.S. Army.

The student additionally learns about the wide range of army career specialties open and has the opportunity to request duty in those fields where qualified. Students may request and be guaranteed reserve forces duty (RFD). Students completing the advanced course prior to graduating may request early commissioning in the army reserves or National Guard. Those students currently in the guard or army reserves may continue to participate in the guard/reserve unit and pursue a commission through the army's simultaneous membership program. Those students who qualify and are contracted for the advanced ROTC program will receive $100 per month subsistence allowance during the school year.

Freshman and sophomore students enrolled in the four-year program are eligible to compete for army military science scholarships for two or three years. These scholarships pay full tuition, fees, books, and a $100 per month subsistence allowance. Any Southern Illinois University at Carbondale student who has at least two academic years of school remaining and who can meet advanced course prerequisites may compete for any army ROTC scholarship. Illinois residents, who are enrolled in ROTC, can compete for state army ROTC scholarships, which pay tuition and other selected fees.

In addition to courses offered for academic credit, the army military science department sponsors extracurricular activities from elite ROTC organization to adventure training. The Ranger Company, Drill Team, and Color Guard are open

to all ROTC students. Adventure training takes shape in the form of rappelling clinics conducted at Giant City State Park, field training exercises, and survival training conducted at Touch of Nature Environmental Center and Shawnee National Forest.

Further information may be obtained from army military science, telephone (Area Code 618) 453-5786.

4 Undergraduate Curricula and Courses

This chapter contains information about the undergraduate curricula and courses offered by Southern Illinois University at Carbondale. The course descriptions for undergraduate courses are included, but those courses offered for graduate students list only the credit hours and title of the course. The descriptions of graduate level courses are included in the Graduate Catalog. Chapter 1 of this bulletin includes a listing of the undergraduate majors and minors offered. Those majors and minors are included in this chapter with a description of the requirements for their completion. This chapter is arranged in alphabetical order.

Abbreviations Used in this Chapter

Specific courses are identified by three-digit numerals plus, in some cases, a single letter. The first numeral of the three indicates the level of that course. A letter following the three numerals may indicate a *part* of a course (where *a* means first part, *b* means second part, etc.) or may identify the topics or subject areas specified in courses such as readings or special problems. A numeral or numerals separated from the identification number by a dash indicates the number of hours of credit received in the course. For example, Physics 203-6 (3,3) indicates a first-level, two-part course of 6 hours in the Department of Physics. The two parts of the course may be referred to as Physics 203a, b.

The five areas of General Education are referred to as GE-A, GE-B, GE-C, GE-D, and GE-E. The three-digit numerals following these abbreviations function similarly to those noted above.

In the areas of this chapter which describe course requirements for programs, numerals in parentheses in columns of figures pertain to semester hours which satisfy more than one requirement. They are in parentheses to avoid their being added to the total of the column, which would be a duplication of hours required. For example, under food and nutrition, GE-A 115 satisfies part of the General Education requirements and contributes 3 hours toward the 45 hours required. The 3 hours is also required for the major in food and nutrition, but does not contribute to the printed total of 53-54 hours.

Course Descriptions

The first entry for each course is a three digit numeral plus, in some cases, a single letter which together with the subject area, serves to identify the course. The first digit indicates that the course is for freshmen, sophomores, juniors, seniors, and graduate students only, depending on whether the digit is 1, 2, 3, 4, or 5 respectively. If the digit is 0, the course is not properly in the above categories.

Following the identification number are a dash and another number, which indicates credit allowed for the course. The maximum credit may be variable, such as Accounting 491-1 to 6. Variable credit courses which have a number of credit hours per semester or per topic which is limited, have those limits in parentheses

following the total maximum hours of credit. An example of such a course is Administration of Justice 492-2 to 6 (2 to 3 per semester). Where courses are formally divided into parts, such as History 330-6 (3,3), the two or more numerals separated by commas in parentheses indicate the credit allowed for each part of the course.

Next is the title, followed by description of the course. If certain requirements must be satisfied before enrollment in a course, they are listed as prerequisites. If a course is a part of the undergraduate pass/fail system, it is so indicated by the term "Elective Pass/Fail" or "Mandatory Pass/Fail."

Not all of the courses described here are offered every semester or even every year. To determine when and where a course is to be offered, consult the schedule of classes obtainable from University Graphics, Southern Illinois University, Carbondale, Illinois 62901. When requesting a schedule, please specify *semester.*

General Education Courses

OUR PHYSICAL ENVIRONMENT AND BIOLOGICAL INHERITANCE (GE-A)

Courses

101-3 Conceptual Insights Into Modern Communication Systems: From Hi-Fi Sound to Laser Beams. The basic laws of nature will be presented in order to understand the functioning of modern communications such as high fidelity sound, radio, and television, and laser beams. There will be a strong emphasis on the nature of home entertainment equipment with discussions on the nature of waves and sound, electricity, and electromagnetism. The students will develop an understanding of the technical vocabulary necessary to judge high fidelity equipment.

106-3 Chemistry for Non-Science Majors. Selected discussions of inorganic, organic and biological chemistry and their relationship to our standard of living and quality of our health and environment. Three lectures with one voluntary help session per week.

110-3 Earth Science. Earth and its major domains with Earth's substances and processes emphasized. Lecture, laboratory. Laboratory manual $3. Elective Pass/Fail.

115-3 Biology. For students with a weak biology background or for students who are non-biology majors but have an interest in gaining general knowledge of our biological inheritance. An introduction to the evolutionary development of our physical and biological environment, to the biological problems and processes of a model living organism, and to the role of biological research in the world of the future. Lecture-laboratory. Laboratory manual $4. Elective Pass/Fail.

117-3 Botany: Plants and Society. An introduction to the basic principles of plant science, historical and modern applications of plants to the human experience, and modern concepts of plant ecology and conservation. Laboratories will include trips to woodlands, wetlands, farms, greenhouses, herbarium, supermarket, farmer's market, and various plant research facilities. A modest field trip fee may be assessed.

118-4 Introductory Zoology. An introduction to the basic concepts of animal life and its diversity, including the elements of cellular and organismic structure and function, reporduction, development, genetics, evolution, and ecology. Three lectures and one 2-hour laboratory per week. Offered fall, spring, and summer terms. A cost of $5 may be incurred by student.

202-3 Space Science — Astronomy. The solar system, our galaxy, and the universe beyond. Fundamental concepts of the physical sciences as applied in astronomy to our space environment. Lectures will be supplemented by demonstrations and by occasional hours of individual or supervised astronomical observations. Not open to students who have had Physics 302 or GE-A 102B. Purchase of exercise sheets under $1.00. Elective Pass/Fail.

221-3 Survival of Man. (Same as GE-B 221 and GE-C 221.) Topics discussed include the interrelated ethnological, technological, sociological, moral and ethical aspects of the environmental problems concerned with technology, air pollution, urbanization, natural resource utilization, agriculture and aesthetics. Emphasis is placed on understanding the total context in which environmental problems must be considered. If both GE-A 220 and 221 are taken, only three hours may be counted in a given area of General Education, but three hours may be counted for the three additional hours required for areas A, B, and/or C.

230-3 Energy and the Future. Lectures on power, energy, and related concepts. Review of

current energy resources and use patterns and outlook for changing patterns including overview of new energy conversion technology and environmental impact of energy use. Look at energy from global viewpoint to identify future limits on energy usage. Voluntary class discussions and student paper presentations.
240-3 Ecology. Fundamental biological and ecological processes important in the individual, population, and community life of organisms including humans are discussed in the context of ecological systems. Lectures are supplemented by one hour of laboratory, field work, or other student options. Elective Pass/Fail.
312-3 Conservation of Natural Resources. A study of people's use and misuse of natural environment emphasizing the ecological perspective.
330-3 Weather. Introduction to constituents and processes in the Earth's atmospheric environment; major atmospheric variables; major features, characteristics of the atmosphere; elemental principles of forecasting; meteorological causes of atmospheric pollution. Interaction of processes and variables to define climate for various regions of the world. Charges not to exceed $10 for field trips, $5 for supplies. Elective Pass/Fail.

OUR SOCIAL INHERITANCE AND SOCIAL RESPONSIBILITIES (GE-B)

Courses

102-3 The Western World. A topical study of the fundamental social, economic, and political elements constituting the traditions of western civilization which are still relevant today.
103-3 Geography of the Human Environment. Provides students with basic information on the nature and problems associated with the major environments of the world. The geographical distribution of climate and physiographic elements of world environments are described. The problems of economic development, environmental change, and the relation of people to the land in the major regions of the world are investigated. Purchase of materials in the range of $4.
104-3 The Human Experience: Anthropology. The main ideas of the anthropological approach to the study of humans. Anthropology's relevance to the student in today's world shown through examples drawn from the subject matter of the field.
105-3 The Contemporary World. An examination of the fundamental problems of the contemporary era as seen in historical perspective. No credit toward the major in history. Purchase of books and materials in the range of $7. Elective Pass/Fail.
108-3 The Sociological Perspective. An examination of the range of social relationships among people: basic sociological concepts and theories, social groups, social institutions, social and cultural change, and social deviance. Elective Pass/Fail.
112-3 Comparative Economic Systems. Introductory investigation of the historical development of the theoretical economic systems of capitalism, socialism, and communism and the practical workings of those systems in such nations as the U.S., the U.S.S.R., Great Britain, China, Yugoslavia, Iran, Poland, et al. Elective Pass/Fail.
202-3 Introduction to Psychology. An examination of the variables related to the origins and modifications of human behavior using the viewpoints and techniques of contemporary psychology. Purchase of syllabus (about $3.00 to $3.50).
205-3 Consumer Decision-Making. To acquaint students with the influence of resource limitations, markets, government, and other socio-cultural forces on individual consumption decision; to analyze the information and apply the economic principles relevant to rational decisions; to increase awareness of consumer rights and responsibilities and the consumer's role in the economy. Students should be able to make more effective purchase decisions and to critically appraise the U.S. economy from the viewpoint of consumers.
211-3 Contemporary Economics. A study of the basic economic problems confronting America and the world today. This course gives students a broad latitude in the structuring of topics to be discussed. Problems are discussed from the point of view of public policy as well as theory. Elective Pass/Fail.
212-3 Introduction to American Government and Politics. An introduction to American government including the cultural context, structure and functions of the national political system, and some attention to subnational politics. Elective Pass/Fail.
215-3 Comparative Race and Ethnic Relations. Comparative study of race and ethnic relations in the U.S., in other developed societies, and in selected developing countries: the persistence of ethnic/racial identities; inter-group relations; government policy; assimilation, segregation, amalgamation, conflict, social problems; separatist and other social movements.
221-3 Survival of Man. (See GE-A 221.)
250-3 Introduction to Comparative Government and Politics. A general introduction to the comparative study of political systems with focus on selected contemporary states. Elective Pass/Fail.

262-3 Marriage and Family in Contemporary Society. Survey of contemporary family life within historical and cross-cultural perspectives. Overview of recent trends in mate selection, marriage, parenthood, employment, and communication in the family. Elective Pass/Fail.
301-3 Modern America from 1877 to the Present. A general survey of the political, social, and economic development of the United States from 1877 to the present. Purchase of books and materials in the range of $7. Elective Pass/Fail.

OUR INSIGHTS AND APPRECIATIONS (GE-C)

Courses

100-3 Music Understanding. The aural perception of musical sound events, relationships, and structures. Helps the student to become a more sensitive and perceptive listener. Listening assignments include a wide variety of styles and kinds of music. Not historically oriented. Elective Pass/Fail.
101-3 Introduction to Art. A basic introduction to the theory, meaning, and creation of visual art with emphasis upon interdisciplinary concerns. Two hours lecture and two hours studio per week. Possible incidental fee maximum $5.
102-3 Problems in Philosophy. Introductory survey of some main philosophic problems concerning people, nature, society, and God, as discussed by major Western thinkers. Possible supplementary paperback expense not to exceed $5. Elective Pass/Fail.
103-3 Introduction to Theater. Introduces students to the world of theater. Through lectures, films, plays, and text readings, students examine various aspects of theater, including history, aesthetics, criticism, and production. The course provides a general background in theater and an opportunity to develop an understanding and appreciation of this art form.
104-3 Moral Decision. Introduction to contemporary and perennial problems of personal and social morality, and to methods proposed for their resolution by great thinkers of past and present. Elective Pass/Fail.
122-3 Appreciation of Literature. A study of masterpieces of fiction, drama, and poetry stressing the timeless nature of world literature. This course is designed to teach and delight by reading, among others, the great works of Shakespeare, Whitman, Poe, Lewis Carroll, Kafka, Arthur Miller, Camus, Sylvia Plath, and Kurt Vonnegut. Prerequisite: GE-D 120; GE-D 101 and GE-D 117, 118, or 119, or equivalent.
200-3 Oral Interpretation of Literature. Beginning study of the oral interpretation of literature: appreciation, analysis, performance. Emphasis is upon literature as human experience and upon the creative role of the reader in engaging the literary text. Incidental costs not to exceed $2. Elective Pass/Fail.
204-3 Meaning in the Visual Arts. Designed to provide students a broad understanding of the history of art and its relation and implications to contemporary culture. Emphasis is placed on the relation of art to all disciplines, historical and contemporary.
205-3 Innovation for the Contemporary Environment. A variety of factors affecting creative individual and small group problem solving and its relevance to the contemporary environment are explored in theory and in practice. Purchase of book $4.50. Elective Pass/Fail.
208-3 Elementary Logic. Study of the basic forms of reasoning, with emphasis on the evaluation of arguments encountered in every-day life. Elective Pass/Fail.
213-3 East Asian Civilization An introduction to East Asian cultural traditions. Literature, philosophy, history, and art of China and Japan. Elective Pass/Fail.
215-3 Types of Religion. An introductory study of selected world religions, emphasizing their meanings for their respective participants, their socio-cultural contexts, and their contributions to the religious history of civilization. Elective Pass/Fail.
221-3 Survival of Man. (See GE-A 221.)
230-3 Classical Civilization. (Same as Women's Studies 260.) A study of the ancient Greeks and Romans, against a background of the world they inhabited. Literature, history, art, philosophy, and sex roles of these peoples, especially at the height of their respective civilizations. Elective Pass/Fail.
330-3 Classical Mythology. An inquiry into the nature of myth and its relevance today while studying selected myths principally of the Greeks and Romans. Elective Pass/Fail.
340-3 The Western Cultural Tradition. The historical evolution of the visual arts, architecture, and music in the context of society and literature, from ancient Greece to the present. Elective Pass/Fail.
345-3 Literature and the Modern World. The study of poetry, drama, and fiction of British, American, and world literature written since 1914. Themes, patterns, and artistic achievements will be studied in connection with the intellectual and cultural backgrounds of the modern age. Prerequisite: GE-D 120; GE-D 101 and GE-D 117, 118, or 119 or equivalent.

ORGANIZATION AND COMMUNICATION OF IDEAS (GE-D)

Courses

101-3 English Composition. Basic principles of sentence structure, paragraphing, and organization. Purchase of handbook in the range of $4 to $5.
106-3 Elementary Algebra. For students with less than one year of high school algebra, this course serves as the prerequisite for the following courses: GE-D 107 and Mathematics 114 and 116. Completion of this course does not satisfy any University graduation requirement. In particular, it does not satisfy the general education mathematics requirement and it does not count toward the 120 hours needed for graduation. Mandatory Pass/Fail.
107-3 Intermediate Algebra. Properties and operations of the number system. Elementary operations with polynomials and factoring. Elementary operations with algebraic fractions. Exponents, roots, and radicals. First and second degree equations and inequalities. Functions and graphing. Systems of equations and inequalities. Exponential and logarithmic functions. Prerequisite: one year of high school algebra or GE-D 106.
117-2 Expository Writing. Practice in the writing of the composition, with emphasis on the logic of organization, demonstration, and expression. Prerequisite: GE-D 120 or GE-D 101 or equivalent.
118-2 Technical Report Writing. An introductory course in technical report presentation both written and oral, in library research methods, and in elementary business correspondence. Prerequisite: GE-D 120 or GE-D 101 or equivalent.
119-2 Creative Writing. Practice in the writing of narrative and poetry. Prerequisite: GE-D 120 or GE-D 101 or equivalent.
120-3 Freshman Honors Composition. Some important works in the history of thought by writers such as Plato, Dostoevsky, Freud, and Marx will be read and discussed. The intellectual problems which they raise will become the subjects for essays in which students are required to show mastery of various methods of organizing exposition. This course fulfills the University freshman composition requirement. Prerequisite: top ten percent of the English section of ACT or the qualifying score on the CLEP test.
152-3 Interpersonal Communication. Designed to enable students to better understand and exercise interpersonal communication skills. Includes both theoretical content and performance sessions.
153-3 Public Speaking. Principles of communication as applied to public settings (speaker/audience). Developing research and speaking skills in the preparation and presentation of various types of messages.

HUMAN HEALTH AND WELL-BEING (GE-E)

Courses

Courses numbered 100-106 are basic or beginning level courses; those numbered 114 are intermediate level. The instructor may have the right to evaluate the skill level of the student at the beginning of the course and reassign the student to the proper level or another activity. Most GE-E physical education classes will be offered on a variable credit of one or two semester hours; one-hour courses meet two hours per week or equivalent; two-hour courses meet four hours per week or equivalent. All GE-E physical education classes are available Elective Pass/Fail. Students will not be allowed to change from a one-hour to a two-hour section or vice versa after the university drop and add period. Students may not earn one semester hour for attending one-half of the sessions scheduled for a two semester hour course.

Appropriate clothing, as determined by instructor, is required for each class. For some activity classes, students are required to furnish equipment, provide own transportation, and pay a course charge.

100-1 to 4 Restricted Physical Education. For physically handicapped students as recommended by Health Service. Mandatory Pass/Fail.
101-1 to 24 (1 or 2 credits per activity) Aquatics. Swimming suits and towels are provided, however, students may wish to provide their own swimsuit, towel, and cap (optional). A fee of $2 is required for all classes listed. **(a)** Beginning swimming. **(b)** Intermediate swimming. Prerequisite: 101a or equivalent. **(c)** Diving. Prerequisite: 101b or equivalent. **(d)** Skin div-

ing. Prerequisite: consent of instructor. Course charge. (e) Scuba diving. Prerequisite: consent of instructor. Course charge, special sections have a charge for field trips. (f) Lifesaving. Prerequisite: pass swim test first day of class, 500 yards, tread water. (g) Canoeing. Prerequisite: pass swim test first day of class, tread water 15 minutes while clothed. (h) Synchronized swimming. Prerequisite: 101b or equivalent. (i) Aquacises. Prerequisite: 101b or equivalent. (j) Water sports. (k) Kayaking. Prerequisite: pass swim test first day of class, tread water 15 minutes while clothed, course charge. (l) Sailing. Prerequisite: pass swim test first day of class, tread water 15 minutes while clothed, own transportation required. Elective Pass/Fail.

102-1 to 10 (1 or 2 credits per activity) Fitness. A fee of $2 is required for all classes listed. (a) Physical Fitness. (b) Relaxation. (c) Weight Control. (d) Weight Training. (e) Yoga. Elective Pass/Fail.

103-1 to 16 (1 to 2 credits per activity) Dance. A fee of $2 is required for all classes listed. (a) Square. (b) Folk. (c) Traditional social. (d) Introduction to modern dance. Leotards and tights without feet are required. (f) Ballet. Women are required to wear leotards, pink tights, and pink ballet slippers; men are required to wear leotards, tights, and black or white ballet slippers. (g) Tap. (h) Current social. Elective Pass/Fail.

104-1 to 34 (1 to 2 credits per activity) Individual and Dual Activities. A fee of $2 is required for all classes listed except 104c and 104k. (a) Archery. Eight arrows required. (b) Badminton. Three shuttlecocks required. (c) Bowling. Lane fee $15 and bowling shoes required; shoe rental available. (d) Cross country. (e) Cycling. Cycle required. (f) Fencing. Glove required. (g) Fly and bait casting. Rod and reel required. (h) Golf. Five hard covered practice balls required. (i) Gymnastics apparatus. (j) Handball. Glove and ball required. (k) Horseback riding. Course charge, own transportation required. (l) Orienteering. Own transportation required. (m) Racquetball. Racquet and one can of balls required. (n) Tennis. Racquet and one can of new balls required. (o) Track and Field. (p) Stunts and Tumbling. (q) Wrestling. Elective Pass/Fail.

105-1 to 12 (1 or 2 credits per activity) Team Activities. A fee of $2 is required for all classes listed. All classes are coeducational. (a) Basketball. (b) Flag Football. (c) Floor Hockey. (d) Soccer. (e) Softball Glove required for 12″ softball. (f) Volleyball. Elective Pass/Fail.

106-1 to 6 (1 or 2 credits per activity) Martial Arts. A fee of $2 is required for all classes listed. (a) Self Defense. (b) Judo. Judo uniform required. (c) Karate. Karate uniform required. Elective Pass/Fail.

107-2 Life, Leisure, and Recreation. Introduction to the meaning, challenges, and problems of leisure. Analyzes leisure's relation to work, education, religion, recreation, and the totality of life. An attempt is made to help students develop insights, values, and attitudes for self-realization and individual fulfillment in leisure pursuits. For non-recreation majors only.

114-1 to 4 (1 or 2 credits per activity) Intermediate Individual and Dual Activity. (c) Bowling. Prerequisite: 104c or equivalent. Lane fee $15 and bowling shoes required; shoe rental available. (f) Fencing. Prerequisite: 104f or equivalent. Glove required. Fee of $2 required. (n) Tennis. Prerequisite: 104n or equivalent. Racquet and one can of new balls required. Fee of $2 required. Elective Pass/Fail.

201-2 Healthful Living. Personal and community health. Designed to meet general health education needs and to develop wholesome health attitudes and practices in college students. Elective Pass/Fail.

236-2 Nutritional Ecology of Man. Interaction between people and their environment. Emphasis on nutritional implications of our social, biological, and physical surroundings. Purchase of supplies ranging from $4 to $5. Elective Pass/Fail.

Accountancy (Department)

Accounting is the process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information. Such information is required and used by parties, both internal and external external to a business; as well as by all forms of not-for-profit organizations.

The curriculum is designed to prepare a student with basic conceptual accounting and business knowledge necessary to develop a foundation for accounting career development. The curriculum also permits the student to elect courses to prepare for a particular area of interest within accounting.

Various laws prescribe the requirements for certification as a public accountant, a management accountant, and an internal auditor. In general, the accounting curriculum prepares the student educationally to meet these various requirements.

Accounting majors must achieve a 2.00 grade point average in accounting pre-

fix courses taken at Southern Illinois University at Carbondale, as well as meet the College of Business and Administration's graduation requirement of 2.00 grade point average in business-prefix courses taken at Southern Illinois University at Carbondale. In addition they must also achieve a grade of *C* or better in accounting-prerequisite courses taken at Southern Illinois University at Carbondale and offered to satisfy the requirements of the professional business core and the major in accounting.

Accounting (Major, Courses)

Bachelor of Science Degree, College of Business and Administration

General Education Requirements	45
Professional Business Core (see page 63)	40-41
Requirements for Major in Accounting	24
Accounting 321 and 322 (financial)	6
Accounting 331(managerial)	3
Accounting 341 (tax)	3
Accounting 351 (systems)	3
Accounting 361 (auditing)	3
Accounting 400-level electives. At least 3 hours must be from courses numbered 420 through 469	6
Electives	10-11
Total	120

Courses

210-3 Accounting Principles and Control. Prevalent accounting principles and practices employed in business organizations. Accumulation of data and usefulness of reports are considered. Tax implications of business studied. Not open to students with a major in the College of Business and Administration. No credit given for 210 if credit is claimed for 220. Elective Pass/Fail.

220-3 Accounting I. Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset liability and owners' equity valuation and their relationship to income determination. No credit given for 220 if credit is claimed for 210. Prerequisite: sophomore standing.

230-3 Accounting II. A continuation of Accounting I with emphasis on the analysis and interpretation of accounting reports including ratios and funds flow analysis. The use of accounting information for managerial planning, control, and decision making through budgeting, cost and variance analyses, and responsibility accounting. Prerequisite: 220.

240-3 Individual Income Tax. Preparation of income tax returns. Federal income tax as applied to individuals. No credit given for 240 if credit is claimed for 341. Not open to those with a major in accounting. Elective Pass/Fail.

321-3 Intermediate Accounting I. Current accounting principles and procedures relating to elements of financial reporting. Particular emphasis on current and fixed asset valuation. Prerequisite: a grade of *C* or better in both 220 and 230 or equivalent; junior standing or consent of department.

322-3 Intermediate Accounting II. Continuation of the study of accounting principles and procedures with emphasis on liabilities, corporate capital, and income determination. Preparation and use of special statements; analysis and interpretation of statements. Prerequisite: 321 with grade of *C* or better.

331-3 Cost Accounting. Interpretation and managerial implications of material, labor, and overhead for job order, process and standard cost systems, cost-volume-profit relationships, direct costing, and budgeting. Accounting for complex process production flows, joint and by-products, spoilage, and scrap. Responsibility accounting and reporting. Prerequisite: 230 with grade of *C* or better or consent of department.

341-3 Introduction to Taxation. Background, principles, and procedures for the determination of taxable income as a basis for federal income tax. Particular attention is given those aspects which are at variance with usual accounting treatment in the determination of net income. Includes practice in the methodology of tax solutions. No credit given for 341 if credit is claimed for 240. Prerequisite: a grade of *C* or better in both 220, 230, or equivalent courses; junior standing or consent of department.

351-3 Accounting Information Systems. Accounting systems design and installation.

The study of accounting information systems, including computer-oriented systems, with emphasis on the information and control functions of the management decision-making process. Prerequisite: a grade of *C* or better in both 322 and 331; Computer Science 212 or equivalent.
361-3 Auditing. Standards, objectives, and procedures involved in examining and reporting on financial statements of business organizations. Prerequisite: a grade of *C* or better in 322.
421-3 Advanced Accounting. Accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, fiduciaries, international operations, branches, and business combinations. Prerequisite: 322 with grade of *C* or better.
422-3 Current Developments in Accounting Theory. Critical analysis of current developments in accounting theory, especially as reflected in the publications of major accounting associations. Prerequisite: 322 with grade of *C* or better.
431-3 Advanced Cost Accounting. Managerial decision making; profit planning and control through relevant costing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. Prerequisite: 331 with grade of *C* or better.
441-3 Advanced Tax. Study of income tax problems which arise from sole proprietorship, partnership, corporation, estate, and trust of organization. Brief study of social security, federal and state estate tax and gift tax. Student does research in source materials in arriving at solutions of complicated problems. Prerequisite: 341 with grade of *C* or better.
451-3 Advanced Accounting Information Systems. A review of current systems design and operation methodologies with special attention to the advantages and disadvantages these provide to an integrated information system. Prerequisite: 351 with grade of *C* or better.
461-3 Advanced Auditing. The study and application of selected auditing concepts and techniques. Hands-on application will be emphasized. Prerequisite: 361 with grade of *C* or better.
471-3 Accounting for Public Organizations. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations, such as governmental units, institutions, and charitable organizations. Includes the conventional budgetary-appropriation process, as well as some of the more recent accounting developments related to public decision making. Prerequisite: 230 with grade of *C* or better.
491-1 to 6 Independent Study in Accountancy. Independent study of specialized aspects of accountancy not available through regularly scheduled courses. Prerequisite: a grade of *C* or better in each of 322, 331, 341, and consent of department.
495-1 to 6 Internship. Supervised work experience in professional accounting. Not for graduate credit. Prerequisite: outstanding record in accounting and recommendation of the departmental committee on internship.
521-3 Financial Accounting Concepts.
522-3 Financial Accounting Theory.
529-3 Seminar in Financial Accounting.
531-3 Managerial Accounting and Control Concepts.
532-3 Controllership.
541-3 Tax Concepts.
542-3 Tax Research and Procedure.
543-3 Corporate Taxation.
544-3 Partnership Taxation.
545-3 Estate Planning.
546-3 Seminar: Selected Tax Topics.
551-3 Accounting Information Systems Concepts.
552-3 Accounting Information Systems II.
561-3 Auditing Concepts.
562-3 Advanced Auditing Topics.
571-3 Not-For-Profit Accounting.
590-3 Seminar in Accounting.
591-1 to 6 Independent Study.
599-3 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Administration of Justice (Major, Courses)

The Bachelor of Science degree with a major in administration of justice meets the career objectives of students interested in law enforcement, corrections, juvenile services, and other roles in social and criminal justice.

Five areas of specialization — law enforcement, security management, correctional program services, correctional management, and juvenile justice and delinquency prevention — have been delineated to give a range of choices suitable for most students preparing for careers in a field of criminal justice. The policy, however, is to fit course requirements to the student's career objectives if none of these specializations are appropriate. In such situations, the student will be required to take the core courses and, under the supervision of the adviser, develop an appropriate battery of courses in lieu of one of the five areas of specialization.

Qualified students may be admitted to the Capstone Program with a major in Administration of Justice. The Capstone Program is explained in Chapter 3.

Field internship placement is an important element in the program and internships are encouraged for qualified students.

Bachelor of Science Degree, College of Human Resources

ADMINISTRATION OF JUSTICE MAJOR — LAW ENFORCEMENT SPECIALIZATION

General Education Requirements 45

Requirements for Major in Administration of Justice 37

Core Requirements: 201, 290, 301, 310, 316 16

Law Enforcement Specialization Requirements: 202, 302, 303, plus 12 hours selected from 403a, 403b, 403c, 415, 460, 471, 472, 492 21

Minor 18

Spanish, Computer Science, one of the physical or social sciences or a group of accounting courses to substitute for the minor is recommended.

Electives 20

Administration of Justice 395, other Administration of Justice courses, Health Education 334, Political Science 436 recommended.

Total 120

ADMINISTRATION OF JUSTICE MAJOR — SECURITY MANAGEMENT SPECIALIZATION

General Education Requirements 45

GE-B 108, GE-B 202, GE-D 101, GE-D 118, GE-D 107, GE-D 153 recommended.

Requirements for Major in Administration of Justice 42

Core Requirements: 201, 290, 301, 310, 316 16

Security Management Specialization Requirements: 302 or 471; 450; Health Education 334; Industrial Technology 465; Psychology 323; Political Science 436 or 332; Accounting 220 21

Security Management Specialization Electives: 5 hours selected from 303, 344, 395, 403a, 403b, 403c, 415, 471, 490, 492, Accounting 230, Administrative Sciences 304, Psychology 320 5

Minor 18

Computer Science, a foreign language, one of the related social sciences or a group of accounting, administrative sciences, or law enforcement courses approved by the department.

Electives 15

Computer Science 102, 202, or 212, Industrial Technology 341, Psychology 320, Political Science 428, 445, 468 recommended.

Total 120

ADMINISTRATION OF JUSTICE MAJOR — JUVENILE JUSTICE AND DELINQUENCY PREVENTION SPECIALIZATION

General Education Requirements	45
Requirements for Major in Administration of Justice	36
Core Requirements: 201, 290, 301, 310, 316	16
Juvenile Justice and Delinquency Prevention Specialization Requirements: 15 hours selected from 300, 344, 348, 471, 473, 485a, 485b	15
Juvenile Justice and Delinquency Prevention Specialization Electives: 5 hours selected from 390, 395, 399, 402, 408, 415, 472, 490, 492	5
Minor	18
Electives	21
Total	120

ADMINISTRATION OF JUSTICE — CORRECTIONAL PROGRAM SERVICES SPECIALIZATION

General Education Requirements	45
Requirements for Major in Administration of Justice	36
Core Requirements: 201, 290, 301, 310, 316	16
Correctional Program Services Specialization Requirements: 15 hours selected from 300, 344, 348, 471, 473, 485a, 485b	15
Correctional Program Services Specialization Electives: 5 hours selected from 390, 395, 399, 402, 472, 490, 492	5
Minor	18
Electives	21
Total	120

ADMINISTRATION OF JUSTICE MAJOR — CORRECTIONAL MANAGEMENT SPECIALIZATION

General Education Requirements	45
Requirements for Major in Administration of Justice	36
Core Requirements: 201, 290, 301, 310, 316	16
Correctional Management Specialization Requirements: 15 hours selected from 300, 471, 472, 485a, 485b	15
Correctional Management Specialization Electives: 5 hours selected from 390, 395, 399, 408, 490, 492	5
Minor	18
Electives	21
Total	120

Not more than three hours of 395 may be counted toward the major.

Minor

A minor in administration of justice consists of 201 and 290 plus any combination of administration of justice courses to reach a total of 18 semester hours.

Courses

201-3 Introduction to Criminal Justice System. Survey of the agencies and processes involved in the administration of criminal justice. The history of English law; the criminal justice process and system, including underlying ideologies, procedures, fundamental legal concepts, and the roles and functions of police, courts, and correctional services.

202-3 Law Enforcement Services. An overview of the services provided by law enforcement agencies. Emphasis will be placed on the nature, scope, and functions of various agency work units in their provision of services to prevent crime, detect and apprehend offenders, provide regulatory services, and specialized community centered services.

290-3 Introduction to Criminal Behavior. Multidisciplinary study of the etiology and patterning of offender behavior.
300-3 Assessment of Offenders. Introduction to the procedures and issues of identifying and evaluating individual differences in offenders and among classes of offenders; analysis of typical diagnostic methods. Prerequisite: 201 and 290 or consent of instructor.
301-3 Human Relations in Criminal Justice. Delineation of major interactive patterns among staff members, between staff and clients, and among clients of probation and parole agencies and correctional agencies; introduction to problems of communication, bureaucracy, and leadership. Prerequisite: 201 and 290 or consent of instructor.
302-3 Introduction to Enforcement Administration. An introduction to the principles of administration and organization of enforcement agencies, including policy, security, conservation, and investigation. Prerequisite: 201.
303-3 Behavioral Aspects of Investigation. Principles of behavioral science are applied to the recurrent patterns of criminal investigation as a social and fact-finding process; survey of criminalistics. Prerequisite: 302.
310-3 Introduction to Criminal Law. The nature and theories of law and social control; legal reasoning and case analysis; simple legal research; statutory construction; principles and history of punishment; constitutional, historical, and general legal principles applicable to the criminal law.
316-4 Introduction to Criminal Justice Research. A basic introduction to the scientific perspective, relationship of research and theory, research design, data collection, data analysis, reporting of research and program evaluation. Emphasis on problems peculiar to criminological research. Prerequisite: 201 and 290 or consent of instructor.
344-2 Drug Use. Types of drugs, drug impact on the American culture, legal and illegal uses of drugs, offenses related to drug use, reaction of the criminal justice system to drugs and drug users, and the treatment and prevention programs coping with drug use. Prerequisite: 201 and 290 or consent of instructor.
348-3 Treatment Modalities. Various treatment methods used throughout the criminal justice system. Explanation and evaluation of various treatment techniques; e.g., behavior modification, transactional analysis and other individual and group therapies. Prerequisite: 201 and 290 or consent of instructor.
390-1 to 4 Readings in the Administration of Justice. In-depth, introductory and advanced readings in areas not covered in other Administration of Justice courses. The student must submit a statement describing the topic and relevant reading materials to the faculty member sponsoring the student's readings. Prerequisite: 201 and 290 and consent of instructor.
395-3 to 15 Supervised Field Experiences in the Administration of Justice. Familiarization and direct experience in applied settings. Under supervision of faculty and adjunct staff, the student assumes a student-participant role in the criminal justice agency. Student must submit internship application during the first thirty days of the preceding spring or fall semester. Prerequisite: 201, 290, 12 hours of Administration of Justice courses and consent of department. Mandatory Pass/Fail.
399-3 Senior Seminar. An evaluation of agency policy and practices observed during the student's field experiences, and synthesis with classroom experiences. Emphasis will also be given to planning a professional career. Prerequisite: 395 or consent of instructor.
402-3 Group and Family Treatment in Criminal Justice. Presentation of theoretical knowledge and practical techniques utilized in major group and family treatment approaches for adults and juveniles in institutions, community-based correctional programs, and transitional living situations.
403-3 to 9 (3 per topic) Enforcement Operations. **(a)** Advanced investigation; **(b)** Enforcement management; **(c)** Enforcement discretion. This course offering provides a broad coverage of law enforcement activities from detailed investigative work through specialized management techniques required. Some sections of the course may be offered only every other year. Prerequisite: **(a)** 303 or graduate status; **(b)** 202 or graduate status or consent of instructor.
408-3 Criminal Procedure. An introduction to the procedural aspects of criminal law pertaining to police powers in connection with the laws of arrest, search and seizure, the exclusionary rule, civil liberties, eavesdropping, confessions, and related decision-making factors. Prerequisite: 310.
409-3 Constitutional Rights of Criminal Justice Personnel. A review of the historical development of civil rights; due process, equal protection, and cruel and unusual punishment theory. Examines court decisions that shape civil rights and affirmative action, the rights of criminal justice personnel, including unionization, free speech, and freedom from arbitrary dismissal.
415-3 Prevention of Crime and Delinquency. Multidisciplinary analysis of the functions, goals, and effectiveness of measures to forestall delinquency and crime. Etiology of delinquent behaviors as related to community institutions such as police, courts, corrections, mental health clinics, schools, churches, and citizen groups. Prerequisite: 201 and 290 or consent of instructor.
416-3 Methods of Criminal Justice Research. The principles of scientific inquiry as applied

to the study of the criminal justice system. Overview and examples of project design, evaluative research, methodology and statistical techniques appropriate to criminal justice research. Strongly recommended for students who plan to conduct empirical research in fulfillment of master's thesis requirement. Prerequisite: 201 and 290 or consent of instructor.
417-3 Research Practicum in the Administration of Justice. Application of the principles set forth in 416. Experience in the various phases of an actual research project, including project design, data collection and analysis, and effective communication of results via written reports. Prerequisite: 201 and 290 and 416 or consent of instructor.
450-3 Public and Private Security. An overview of important issues related to internal and external security and loss prevention. Covers security's historical development; its current role; different careers available; the prevention, detection, and reduction of hazards stemming from both internal and external sources; as well as certain administrative aspects.
460-3 Women and the Criminal Justice System. Addresses the topics of women as offenders, as victims and as workers in the criminal justice system. Prerequisite: 201 and 290 or consent of instructor.
471-3 Principles of Management in the Administration of Justice. Basic principles and techniques of management in law enforcement, correctional, and other criminal justice agencies. Prerequisite: 201 and 290 or consent of instructor.
472-3 The American Correctional System. (Same as Sociology 472.) A survey of the correctional field, covering probation, institutional treatment, and parole. Historical development, organizational structure, program content, and current problems. Prerequisite: 201 and 290 or consent of instructor.
473-4 Juvenile Delinquency. (See Sociology 473.) Prerequisite: 201 and 290 or consent of instructor.
476-3 Crime and Criminal Justice: International Dimensions. Examination of sociocultural and political factors shaping criminality and responses to crime around the world. Similarities and differences in criminogenic conditions and practices of law enforcement and corrections are traced. Prerequisite; 201 and 290 or consent of instructor.
485-3 to 6 (3 per topic) Selected Topics in Correctional Program Services. **(a)** Correctional case management. Prepares students to become practitioners, supervisors, and administrators in probation, parole, correctional institutions, and community-based programs in roles traditionally assigned to probation and parole officers, correctional counselors, social workers, and similar titles. Recognizes the importance of the case manager as a planner, mobilizer of resources, advocate, and community organizer. **(b)** Corrections and the community. Traditional correctional functions are redefined to emphasize development of resources of community at large, diversion of convicted offenders from institutions and direct involvement of correctional programs in community affairs. Prerequisite: three administration of justice courses or consent of instructor.
490-1 to 3 Independent Study in the Administration of Justice. Supervised readings or independent investigative projects in the various aspects of crime control, treatment of offenders; and management of programs of law enforcement, courts, and correctional agencies. May be repeated up to a maximum of three credit hours. Prerequisite: 201 and 290 or consent of instructor.
492-2 to 6 (2 to 3 per semester) Comtemporary Issues in Administration of Justice. A forum for focusing on special interest topics depending on the availability of staff, visiting professors, and other selected instructional resources to cover a contemporary issue of concern to students and the faculty. May re-enroll for a maximum of six credits. Prerequisite: 201 and 290 or consent of instructor.
500-3 History and Philosophy of Criminal Justice System.
504-3 Criminological Theory.
516-3 to 6 (3 per topic) Seminar in Advanced Criminal Justice Research.
562-3 Fundamental Legal Systems in Criminal Justice.
571-3 Correctional Systems in Criminal Justice.
572-4 Seminar in Criminology.
578-1 to 4 Seminar in Correctional Rehabilitation Counseling.
580-3 Planning for Change in the Administration of Justice.
582-3 Criminal Law and the Correctional Process.
584-3 Seminar in Criminological Program Management.
587-3 Seminar in Law Enforcement.
588-3 to 9 (3 per topic) Selected Topics in Law Enforcement.
590-1 to 3 Supervised Readings in Selected Subjects.
591-3 to 6 Individual Research.
592-3 Advanced Seminar in Administration of Justice.
595A-3 or 6 Supervised Field Work (Internship).
595B-3 or 6 Supervised Field Work (Internship).
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Administrative Sciences (Department, Major, Courses)

The Department of Administrative Sciences is concerned with decision making in the allocation of resources toward the achievement of an organization's objectives. The setting of the organization may be government, business, health, or education, but of greater concern is the administrative process itself regardless of where it takes place.

Students are provided with a curriculum drawing on a variety of disciplines each of which contributes certain conceptual tools and techniques useful in improving the decision making performance of the administrator. Beyond the fundamental departmental requirements and those of the College of Business and Administration, a choice of three specialty programs is available.

Management. Administrators make and implement decisions through and with people working together toward the achievement of common societal, organizational, and personal goals. Understanding the organizational and environmental factors that influence individuals and groups, particularly in work settings, is critical to the success of managers and other employees. By carefully selecting courses, students can satisfy the general requirements of an administrative sciences major, and orient their programs of study toward career tracks in general management or personnel management. In each case, opportunities exist to pursue interests in administrative applications to a wider variety of organizational settings including government, health, and education, as well as small and large business.

Decision Sciences. The decision sciences rely upon analytical problem-solving approaches to establish resource allocation policies and decisions that will enhance the organization's effectiveness and efficiency. This specialization includes areas of production-operations management, management information systems, and quantitative analysis. By choosing appropriate electives, students can concentrate their preparation in one or more of these areas. Students with a decision sciences specialization are prepared to enter a wide variety of private or public organizations in either direct management or staff positions.

Entrepreneurship. Entrepreneurship is the acceptance of risk in the management and direction of a venture. This specialization explores the special problems associated with the operation of an independent and often small business venture. Students may select courses relating to the special problems and techniques appropriate to the task of venture management in preparation for ownership and management roles in their own or a family business venture. By careful selection of courses from all of the administrative sciences, students can select the appropriate courses that will prepare them for their future positions in manufacturing, service, or retailing organizations. Research and consulting positions are also alternatives available to students with this specialization as well as the direction of new ventures for larger organizations.

Bachelor of Science Degree, College of Business and Administration

General Education Requirements 45
Professional Business Core (see page 63) 40-41
Requirements for Major in Administrative Sciences 24
Administrative Sciences 341, 352, 361 9
Specializations (Choose one)

Management.

Administrative Sciences 385 or 485 and 431 or 474 6

Choose at least 9 hours from the following (at least 3 hours must be selected from Administrative Sciences courses): Administrative Sciences 345, 350, 385, 431, 456, 474, 485, 489a, Accounting 331, 351, 471, Economics 310, 333, 340, 341, 375, 429, 436, 442, 479, 481, Finance 421, 475, 476, 480, Geography 306, Geology 478, Industrial Technology 382, 465, 466, Marketing 439, 452, Philosophy 342, 415, Political Science 324, 441, Psychology 307, 309, 322, 323, 421, 461, Sociology 332, 426, 475, Speech Communication 280, 326, 362, 480 9

Decision Sciences.

Administrative Sciences 345 and 453, or 456 or 483 6

Choose at least 9 hours from the following (at least 3 hours must be selected from administrative sciences courses): Administrative Sciences 385, 453, 456, 483, 489b, Accounting 331, Marketing 452; Computer Science 204, 312, Industrial Technology 365, 382, 465 9

Entrepreneurship.

Administrative Sciences 350 and 489c, Finance 350, Marketing 350 12

Choose 3 hours from the following: Accounting 331 or 341, Administrative Sciences 345, 385, 431, 456, 474, or 485, Finance 327, 328, 378, or 379, Marketing 401 or 438 3

Electives 10-11

Total 120

Courses

170-3 Introduction to Business Administration. Survey of business. General knowledge of the modern business world, the composition and functions of the business organization, as well as business as a social institution. Open only to freshmen and sophomores. Does not satisfy a College of Business and Administration requirement. Elective Pass/Fail.

202-3 Administrative Communications. Creating and managing administrative communications including the analysis, planning, and practice of composing different types of internal and external communications in various administrative and business contexts. All students must pass a competency test to pass the course. Prerequisite: GE-D 101 or equivalent.

208-3 Interpretation of Business Data. Uses of business data in policy formulation are discussed. Emphasis is placed on the conversion of raw information into statistics which are useful to the decision maker. Problems stress solution to questions typically raised in businesses. Prerequisite: Mathematics 116 or 139 or equivalent. Elective Pass/Fail.

300-3 Internship in Administrative Sciences. Supervised work experience that relates to the student's academic program and career objectives. Not repeatable for credit. Prerequisite: junior standing and consent of department. Mandatory Pass/Fail.

301-3 Management and Supervision. Functions of management and the requisites for effective supervision are emphasized by way of application to practical situations. For nonbusiness majors who expect to assume supervisory responsibility where successful allocation and evaluation of human resources is necessary. Does not satisfy a College of Business and Administration requirement. Prerequisite: junior standing or consent of department. Elective Pass/Fail.

304-3 Organization Administration. Basic concepts of the administrative process are considered with emphasis on executive action to develop policy, direction, and control based on traditional and behavioral science approaches to decision making. Prerequisite: junior standing or consent of department. Elective Pass/Fail.

318-3 Production-Operations Management. An introduction to the design, operation, and control of systems or processes by which materials, labor, and capital are combined in an organized way with the objective of producing goods or services. Topical coverage includes the systems concept, planning, forecasting, job design, location, layout, logistics, schedul-

ing, and production, inventory, quality, labor, and cost control. Prerequisite: 208, Mathematics 117 or 140, Computer Science 212 or Electronic Data Processing 217 or equivalent, junior standing or consent of department. Elective Pass/Fail.

341-3 Organizational Behavior I. The study of human problems in administration including the analyses of individual, group, and inter-group relations under a broad range of organizational settings. Theory and case analyses. Prerequisite: 208, and 304 and junior standing or consent of department. Elective Pass/Fail.

345-3 Introduction to Management Systems. Integrates topics of management and organization, information, computers, and the systems approach. Emphasizes planning, design, and implementation of information systems to aid management decision making. Application of computer techniques to develop, manipulate, and analyze system models. Prerequisite: 318 and junior standing or consent of department. Elective Pass/Fail.

350-3 Managing the Small Business. Identification of small business, its importance and relationship to the United States economy and the opportunities and requirements unique to operation and management. Personal characteristics, interpersonal relationships, organizational systems, and decision-making processes are examined for their contribution to the success or failure of the firm. Prerequisite: junior standing or consent of department. Elective Pass/Fail.

352-3 Management Science I. An introduction to mathematical model building in organizations and the solution techniques commonly used to solve such models. Topical coverage includes decision theory, mathematical programming, inventory models, queuing models and simulation. Prerequisite: 208, Mathematics 117 or 140 or equivalent and Computer Science 212 or Electronic Data Processing 217 or equivalent, junior standing or consent of department. Elective Pass/Fail.

361-3 Research Methods in Administration. Design of research to assist managerial decision making. Concepts, tools, sources, and methods of research. Planning, collecting, organizing, evaluating, and presenting research data. Prerequisite: 202, 304, 208 and junior standing or consent of department. Elective Pass/Fail.

385-3 Personnel Management. An introduction to the development, application, and evaluation of policies, procedures, and programs for the recruitment, selection, development, and utilization of human resources in an organization. Prerequisite: 304 or equivalent, introductory statistics, and junior standing or consent of department. Elective Pass/Fail.

402-1 Strategies for Seeking Employment. The job placement process and the work environment from the viewpoint of the applicant. Emphasis on career planning, manpower analysis, placement and interviewing techniques with a stress on the transition from the academic community to the business and professional environment. Not offered for graduate credit. Prerequisite: senior standing or consent of department. Mandatory Pass/Fail.

431-3 Organizational Behavior II. The study of modern theories of complex organizations. Particular emphasis is placed on open-systems perspectives of administrative theory and the adaption of the organization to a changing environment. Prerequisite: 341 and junior standing or consent of department. Elective Pass/Fail.

453-3 Management Science II. A continuation of 352. Mathematical model building in organizations and solution techniques commonly used to solve such models. An extension of topics in deterministic and probabilistic modeling introduced in 352. Prerequisite: 352, junior standing or consent of department.

456-3 Management Systems Applications. Investigation of selected systems and computer based methods for aiding management decision-making. Topics include systems analysis applications, simulation, and decision models. Prerequisite: 345, 352 and junior standing or consent of department. Elective Pass/Fail.

474-3 Management Responsibility in Society. Analysis of the cultural, social, political, economic, and immediate environment of the organization. Particular emphasis is given to the manner in which the manager adapts to and is influenced by the environment and its conflicting demands. Prerequisite: senior standing or consent of department. Elective Pass/Fail.

481-3 Administrative Policy. Development of organizational strategies and policies within environmental and resource limitations. Emphasis upon the application and integration of basic principles from all areas of business by case problem analysis, simulation exercises, and group participation. Not for graduate credit. Prerequisite: senior standing, 304, 318, Finance 320, Marketing 304, or equivalent. Elective Pass/Fail.

483-3 Production Planning, Scheduling, and Control. In-depth study of analytical planning, scheduling, and control theory and techniques in the context of production/operations systems. Case exercises will be utilized to illustrate production management problems and methods. Prerequisite: 318, 352, junior standing or consent of department. Elective Pass/Fail.

485-3 Organizational Development. Analysis of problems in personnel management with emphasis on current trends and techniques. Case problems, special reports, and experien-

tial approaches are used as a basis for examining ways of using an organization's human resources to best advantage. Prerequisite: 341, junior standing or consent of department Elective Pass/Fail.

489-9 (3, 3, 3) Seminar in Administrative Sciences. Investigation of selected special or advanced topics in seminar format. Topics may include, but are not limited to: management responsibility in society, wage and salary administration, health services administration, data processing management, current issues in management, etc. **(a)** Management. **(b)** Decision Sciences. **(c)** Entrepreneurship. May be taken singly; normally a student takes only one of the three options. Prerequisite: consent of department. Elective Pass/Fail.

491-1 to 6 Special Topics in Administration. Utilizes special faculty resources to enable individually, the exploration of an advanced area of study through research by means of data analysis and/or literature search. Prerequisite: consent of department.

Advanced Technical Studies (Division, Courses)

The School of Technical Careers offers the Bachelor of Science degree with seven majors. Five majors are described below and the others are described in this chapter under consumer economics and family management or interior design.

The Bachelor of Science degree programs are designed to provide technically-oriented programs of study which are made up of required core courses, program major requirements, approved major electives, approved technical electives, and the University's General Education requirements. Majors are available for students qualifying for enrollment in aviation management, career development which is offered only on-campus, electronics management, fire science management, and health care management.

Students with educational and occupational backgrounds and career objectives in areas related to aviation, electronics, fire science, and health care are encouraged to pursue the major areas of study. Details of each major are listed below. Students with technical backgrounds and career objectives in areas other than those listed above are encouraged to pursue the career development major.

Students who have earned a minimum of 26 semester hours of recognized postsecondary credit or equivalent as determined by the academic unit or with the consent of the department are eligible for admission. Students must have a cumulative 2.00 grade point average or better, based on course work at Southern Illinois University at Carbondale. Transfer students admitted in good standing are also eligible for admission. A minimum of 30 semester hours in the core and major courses must be taken with Southern Illinois University at Carbondale, with at least 24 of these hours taken after admission to the program. Students must complete all course work in the program core and major requirements and elective areas with a 2.00 grade point average or better. Additionally, students must fulfill all University requirements including general education, total hour requirements, residence requirements, and average requirements.

Qualified students may be admitted to the Capstone option for completion of University general education requirements. The Capstone option is explained in Chapter 3. Graduates of two-year occupational programs are encouraged to investigate the option. Qualified students can fulfill the requirements for the Bachelor of Science degree in technical careers by completing 60 additional semester hours approved by a Capstone adviser.

Provision is made for recognizing many forms of previous educational, military, and occupational experience for credit toward the degree. Credit is established by departmental evaluation. In addition, field internships and independent study opportunities are available.

Persons interested in the on-campus programs should contact the director, Division of Advanced Technical Studies, concerning advisement, program requirements, and other specifics. Persons interested in off-campus programs should contact the assistant dean, Office of Off-Campus Academic Programs.

Admission to the Bachelor of Science degree program in technical careers does not imply admission to any School of Technical Careers associate degree program.

AVIATION MANAGEMENT (MAJOR)

This baccalaureate program is designed to serve students already in the aviation industry or with a career goal of entering one of the key segments of the aviation industry. These segments include aviation manufacturing, the airlines, general aviation, military aviation, and government agencies such as the Federal Aviation Administration, state aviation agencies, or local airport authorities.

The aviation management major is also designed to build upon technical training in aviation maintenance, flight, avionics technology, air traffic control, aircraft operations support, or other aviation-related fields. The technical training may be gained through Southern Illinois University at Carbondale, other postsecondary institutions. proprietary schools, the military, government agencies (international or domestic), or through government certified flight or maintenance training schools. Students entering the aviation management major are encouraged to complete the requirements of an aviation-related associate degree under the provision of the Capstone option as explained in Chapter 3. As an alternative to an associate degree in aviation, students in aviation management should have aviation-related work experience, internship experience, or technical training. Finally, concurrent enrollment in aviation-related degree programs, internships, or technical training is encouraged for those students not having prior aviation training, experience, or education.

This program meets many of the requirements of the University's Federal Aviation Administration-approved airway science curriculum. The airway science curriculum qualifies individuals for direct placement on the FAA register for employment. For further information on the airway science curriculum, contact the Division of Advanced Technical Studies, School of Technical Careers.

Bachelor of Science Degree, School of Technical Careers

General Education Requirements	45
Requirements for Major in Aviation Management	48
Core Requirements: Avanced Technical Studies 364, 416, and two of the following: 332, 383, 421	12
Fifteen hours selected from Advanced Technical Studies 370, 371, 372, 373, 374, 375, 376, 377, 383, 386, 401	15
Twelve hours of internship, independent study, or approved equivalent	12
Nine hours of aviation management electives approved by the adviser	9
Electives	27
Total	120

CAREER DEVELOPMENT (MAJOR)

The career development major is offered on-campus only. It is designed specifically for students who have entered career paths for which there are no traditional baccalaureate degrees. Students develop individualized learning contracts with the assistance of faculty advisers. The program is designed to build upon a person's education and work experience through courses selected to meet technical career objectives. It is ideally suited for community college and technical institute graduates holding occupationally-oriented associate degrees. These students are encouraged to take advantage of the Capstone option ex-

plained in Chapter 3. Students interested in technical areas not available through associate degrees are also encouraged to consider this major. The individualized nature of the program affords the flexibility to meet the needs of student from many diverse technical backgrounds who desire to develop and expand the skills to enhance their career opportunities.

Graduates find employment in business and industry in such fields as construction, automotive, data processing systems, office management, architectural drafting/design, graphic design, advertising, property management, small business applications, and allied health careers.

Bachelor of Science Degree, School of Technical Careers

General Education Requirements		45
Requirements for Major in Career Development		48
Core Requirements: Advanced Technical Studies 364, 416, and two of the following: 332, 383, 421	12	
Twenty-four hours of approved career development requirements with at least 15 hours at the 300-400 level	24	
Twelve hours of internship, independent study, or approved equivalent	12	
Electives		27
Total		120

ELECTRONICS MANAGEMENT (MAJOR)

This major is designed to provide advanced practical course work in the areas of electronics, management, supervision, and technology for individuals who have technical training in electronics-oriented fields from colleges and universities, technical institutes, community colleges, proprietary institutions, industry-related programs, or military technical schools. The major also builds upon career specialties in the army, navy, marine corps, or air force. The specialties include ground equipment electronics systems, communication, navigation, avionics instruments, radar and others in the appropriate career specialty listing.

Opportunities for employment and advancement appear to be excellent with a wide range of initial job selectivity.

Bachelor of Science Degree, School of Technical Careers

General Education Requirements		45
Requirements for Major in Electronics Management		48
Core Requirements: Advanced Technical Studies 364, 416, and two of the following 332, 383, 421	12	
Fifteen hours selected from Electronics Technology 301, 302, 303, 311, 312, 313, Advanced Technical Studies 340, 341, 342, 343, 383, 412	15	
Twelve hours of internship, independent study, or approved equivalent	12	
Nine hours of electronics management electives approved by the adviser	9	
Electives		27
Total		120

FIRE SCIENCE MANAGEMENT (MAJOR)

This major is designed to provide advanced practical course work in the areas of management and supervision. It is designed primarily for those who hold or are

nearing completion of the Associate in Applied Science degree or its equivalent in a fire science-related field from a technical institute or community college. The major is presently offered only at off-campus sites. Contact the Office of Off-Campus Academic Programs for information on current availability.

Many graduates are employed in supervisory and management positions in the fire service, insurance industry, fire equipment manufacturing industry, and related fields.

Bachelor of Science Degree, School of Technical Careers

General Education Requirements		45
Requirements for Major in Fire Science Management		48
Core Requirements: Advanced Technical Studies 364, 416, and two of the following 332, 383, 421,	12	
Fifteen hours selected from Advanced Technical Studies 387, 402, 412, Political Science 340, Industrial Technology 465	15	
Twelve hours of internship, independent study, or approved equivalent	12	
Nine hours of fire science management electives approved by the adviser	9	
Electives		27
Total		120

HEALTH CARE MANAGEMENT (MAJOR)

This major is designed to provide course work and experience in the areas of management and supervision for individuals who have training in health-oriented fields from colleges and universities, technical institutes, community colleges, proprietary institutions, or military technical schools. Graduates from diploma programs may also be eligible for admission.

The major builds upon many career specialties. These include, but are not limited to, dental hygiene, dental technology, laboratory technology, medical assisting, medical corps, medical records, medical service corps, mortuary science, nursing, physical therapist assistant, radiologic technology, and respiratory therapy.

Many graduates are obtaining management and supervisory positions in various health and medical care facilities such as hospitals, nursing homes, public health departments, voluntary health agencies, and health care training institutions.

Bachelor of Science Degree, School of Technical Careers

General Education Requirements		45
Requirements for Major in Health Care Management		48
Core Requirements: Advanced Technical Studies 364, 416, and two of the following 332, 383, 421	12	
Fifteen hours selected from Advanced Technical Studies 380, 381, 382, 383, 384, 385, 388, 412	15	
Twelve hours of internship, independent study or approved equivalent	12	
Nine hours of health care management electives approved by the adviser	9	
Electives		27
Total		120

Courses

250-3 Basic Air Traffic Control. This course provides instruction in basic air control procedures and phraseology used by personnel providing air traffic control services. Students will become familiar with Federal Aviation Administration handbooks and federal aviation regulations that pertain to the operational responsibilities of an air traffic controller.
319-1 to 15 Occupational Internship. Each student will be assigned to a University approved organization engaged in activities related to the student's academic program and career objectives. The student will perform duties and services as assigned by the perceptor and coordinator. Reports and assignments are required to be completed by the student. Hours and credits to be individually arranged. Mandatory Pass/Fail.
320-1 to 10 Work Study Internship. Provides work-study students with an opportunity to participate in an on-campus work experience related to their academic program and career objectives. Hours and credits are to be individually arranged. Mandatory Pass/Fail.
321-3 Seminar in Technical Careers. The purposes of this course is to allow those School of Technical Careers baccalaureate students who have had little or no experience within their chosen careers to become acquainted with the current state of the professions to which they aspire. The object is to help students prepare themselves for maximum competitiveness within the job market through awareness of existing job opportunities, knowledge of job requirements, and selection of course work appropriate to meet specifications of available positions.
332-3 Labor-Management Problems. Students will gain a general understanding of the economic situation of which labor-management problems represent a subset. They will develop a perspective on the evolution of labor relations in the United States economy and on how the interaction of labor and management differs throughout the world. The collective bargaining section introduces the student to the techniques of bargaining used by labor and management in their ongoing interactions. Lecture three hours.
340-3 Application of Solid State Devices. A technical management approach to the practical application of solid state devices in business and industry. Characteristics of these devices will be reviewed to promote understanding of the selection and application process. Special emphasis will be given to the application of linear integrated circuits as well as the operational amplifier and its application instrumentation. Prerequisite: consent of department.
341-3 Digital Circuit Applications. Applications of digital electronic devices and circuits in business and industry. Geared to the needs of the technical manager, this course builds upon the student's knowledge of basic electronics theory. Basic principles of subsystems are reviewed to assist the student in understanding their selection and application to business and industrial settings. Prerequisite: consent of instructor.
342-3 Microcomputer Applications. The microcomputer approached from the standpoint of the technical manager. The primary emphasis of this course is on the practical uses of microcomputer systems in business and industry. Basic characteristics and principles of microcomputers will be reviewed to provide an understanding of applications in specific business and industrial settings. Prerequisite: consent of department.
343-3 Microcomputer Application Laboratory. Laboratory experiences selected to reinforce microcomputer characteristics and practical applications in business and industry. Students sample applications of microcomputer systems on an operational microprocessor. Prerequisite: consent of department.
350-1 to 32 Technical Career Subjects. In-depth competency and skill development and exploration of innovative techniques and procedures used in business, industry, professions, and health service occupations offered through various workshops, special short courses, and seminars. Hours and credit to be individually arranged. This course may be classified as independent study. Prerequisite: consent of instructor.
361-3 Fiscal Aspects of Technical Management. An introduction to fiscal structures and problems encountered in the technically oriented enterprise. Lecture three hours.
362-3 Legal Aspects of Technical Management. An introduction to the types of legal problems encountered in the technically oriented enterprise. Lecture three hours.
363-1 to 3 Special Problems in Technical Management. Independent study for qualified students. **(a)** Aviation management; **(b)** Health care services; **(c)** Construction management; **(d)** Electronics systems; **(e)** Fire science; **(f)** Technical management.
364-3 Work Center Management. A study of the problems of managing a small working unit (division, department, work center, section, etc.) within a larger unit (agency, company, regional office, etc.). Included items will be work center goals identification, staffing needs, monitoring of work process reporting, work center communications, and interpersonal relations within the work center. Lecture three hours.
370-3 Airport Planning. To acquaint the student with the basic concepts of airport planning and construction, as well as an investigation of various community characteristics and resources.
371-3 Aviation Industry Regulation. A study of the various regulatory agencies of the industry and their functions.

372-3 Airport Management. A study of the operation of an airport devoted to the phases of lighting, fuel systems, field marking, field buildings, hangars, and surrounding community.
373-3 Airline Management. A study of the administrative aspects of airline operation and management including a detailed study of airline organizational structure.
374-3 General Aviation Operations. A study of general aviation operations including fixed base operations (fuel, sales, flight training, charter, etc.), corporate aviation (business aviation, corporate flight departments, executive air fleets, etc.) and the general aviation aircraft manufacturing industry.
375-3 Legal Aspects of Aviation. The student will develop an awareness of air transportation. The course will emphasize basic law as it relates to contracts, personnel, liabilities, and legal authority of governmental units and agencies. Lecture three hours.
376-3 Aviation Maintenance Management. To familiarize the student with the functions and responsibilities of the aviation maintenance manager. Maintenance management at the fixed base operator, commuter/regional airline, and national air carrier levels will be studied. Aviation maintenance management problems areas will be reviewed using the case study method.
377-3 Aviation Safety Management. This course will survey the various aspects of aviation flight and ground safety management. Weather, air traffic control, mechanical and human factors in aviation safety management will be reviewed. Case studies of individual aviation accidents and incidents will be analyzed.
378-3 National Airspace System. This course provides instruction in the national airspace system, its purpose and major components. It defines the Federal Aviation Administration role in the operation, maintenance, and planning of the national airspace system. Prerequisite: 250 and consent of department.
380-3 Seminar in Health Care Services. Seminar on the various existing and emerging issues which affect control and implementation of health care services to consumers. Topics include but not limited to manpower, information, technology, materials, financing, and data utilization.
381-3 Health Care Management. A study of the principles of effective management techniques including planning, decision making, organizing, budgeting, communication, and direction.
382-3 Health Economics. An analysis of the economics of health care in the United States and its effect on society and the health care profession.
383-3 Data Interpretation. A course designed for students beginning their major program of study to examine data use in their respective professions. Emphasis will be placed upon an understanding of the basic principles and techniques involved with analysis, synthesis, and utilization of data.
384-3 Equipment and Material Management in Health Facilites. Prepares health care administrators with the necessary management tools to assure comfort, safety, and well-being of patients, hospital personnel, and visitors, and to focus their attention on sound maintenance management practices, materials procurement, storage and preservation, records keeping, and the utilities systems needed in a health care facility.
385-3 Fiscal Aspects of Health Facilities. An introduction to the fiscal problems encountered in the administration of health care facilities.
386-3 Fiscal Aspects of Aviation Management. An introduction to the fiscal problems encountered in the administration of aviation facilities.
387-3 Fiscal Aspects of Fire Service. An introduction to the fiscal problems encountered in the administration of fire service facilities.
388-3 Legal Aspects of Health Care. To supply the student an awareness of the legal requirements affecting health care facilities. The course will emphasize the basic law of contracts, consents, records, personnel, liabilities, privacy, and other routine functions. Successful students acquire an understanding of the need for legal counsel. Lecture three hours.
401-3 Current Issues in Aviation Management. A review of current problems affecting the aviation industry with particular emphasis on resource allocation, planning, and internal and external constraints. Not for graduate credit. Prerequisite: a course in economics or marketing, senior standing, consent of instructor.
402-3 Current Issues in Fire Science Services. A review of the current problems affecting the fire service with particular emphasis on resource allocation, planning, and constraints. Not for graduate credit.
410-3 Fire Prevention and Inspection. Laws and regulations affecting fire prevention; administering building and fire codes; interpreting building, fire prevention, and state fire marshall codes; and inspection procedures. Not for graduate credit.
411-3 Fire Insurance Rating. Analysis of fire hazards for computing fire insurance rates. Actuarial basis of rating schedules with particular emphasis on the analytic system for measurement of relative fire hazard. Not for graduate credit.
412-3 Grantsmanship. Provides the student with an understanding of the availability of public and private funding in a specific technical area, how to apply for such funds, the pro-

cess for approving such applications for funding, how the grants are administered once awarded, and who the funding agencies, companies, or foundations are. Each student will prepare a grant proposal including objective statements, study methodology, work program, work schedule, program budget, end products, and overall packaging. Not for graduate credit.

416-1 to 4 Applications of Technical Information. This course is designed to increase student competence in analyzing and utilizing the various types of technical information encountered by managers in technical fields. Not for graduate credit.

421-1 to 3 Professional Development. Introduces students to the various elements involved in obtaining a position in their chosen career field. Topics included are: personal inventories, placement services, employment agencies, interviewing techniques, resumes, letters of application, references, and employment tests. Each student will develop a portfolio including personal and professional information related to individual career goals. Not for graduate credit. Prerequisite: enrollment in School of Technical Careers baccalaureate program or consent of instructor. Elective Pass/Fail.

426-3 Technical Training for International Development. A better understanding of the necessary relationships between technology, technical training, and development, especially in third world countries. The successful completion of this course allows for a more effective appreciation in the transfer of technical training from the United States to other developing areas of the world which may include not only other nations but also underdeveloped parts of the United States. Not for graduate credit.

Aerospace Studies (Department, Courses)

Aerospace Studies is a voluntary course sequence leading to a commission as an officer in the United States Air Force. When commissioned, all officers must have at least a baccalaureate degree; hence completion of the program is contingent upon maintaining satisfactory progress toward graduation. Enrollment in the first two years (general military course) is unrestricted and no military obligation is incurred. Special students who do not intend to obtain a commission are welcome.

Acceptance into the last two years (professional officer course — POC level) is competitive and requires qualification on the Air Force Officer Qualifying Test and a physical examination. For some officer candidates, the field of concentration must be related to an officer career specialty in the air force. Students in the professional officer course do incur a military obligation. They are paid a monthly tax-free subsistence allowance. Graduate students who have two years remaining at the University, not counting summers, are eligible.

Qualified students may enter directly at the POC level without completing the general military course by attending a six-week field training course during the summer prior to entrance. Four year students attend a four-week field training course. Field training is conducted at air force bases and students are paid while attending.

Students are required to complete one three-hour course in mathematical reasoning as part of the program.

Courses

100-.5-1 (.5, .5) Leadership Laboratory I. Supervised laboratory taken concurrently with 101 and 102. Students develop leadership potential by participating in practical leadership situations. Emphasis is on customs and courtesies, uniform wear, drill, and performance as a unit.

101-1.5 United States Air Force. Evolution of modern aerospace power and concepts on which it was developed. Introduction to aerospace support forces. Includes airlift, research and development, logistics, and education and training. Prerequisite: concurrent enrollment in 100a.

102-1.5 Aerospace Offensive and Defensive Forces. Introduction to U.S. general purpose and strategic offense forces, and the constraints involved in the use of modern weapons. Introduction to concepts, organization, equipment, and procedures involved in strategic defense of the United States. Prerequisite: concurrent enrollment in 100b.

200-.5-1 (.5, .5) Leadership Laboratory II. Supervised laboratory taken concurrently with 201 and 202. Students develop leadership potential by participating in and leading drill, emphasizing customs and courtesies in preparation for field training.

201-1.5 The Development of Air Power I. History of manned flight from pre-aircraft to end of World War II. Develops the themes of doctrine, technology and evolution of aircraft, and U.S. Air Force. Prerequisite: concurrent enrollment in 200a.
202-1.5 The Development of Air Power II. History of United States Air Force from separate military department status into early 1970's. Highlights the versatility of air power and the changing role of machines, people, and tactics in air warfare. Prerequisite: concurrent enrollment in 200b.
258-4 Field Training Equivalency. Work experience credit for 101, 102, 201, and 202. This credit will be evaluated by the Department of Aerospace Studies. Prerequisite: satisfactory completion of either the four-week or six-week field training course for AFROTC POC applicants.
300-.5-1 (.5, .5) Leadership Laboratory III. Supervised laboratory taken concurrently with 301 and 302. Students develop leadership potential by assuming command and staff responsibility. Students are responsible for implementing the goals and objectives of leadership laboratory, supervising GMC cadets, and participating in special projects. Prerequisite: consent of instructor.
301-3.5 Management and Leadership I. Student relates current management and leadership theory to problems faced by middle managers in a large bureaucracy, the United States Air Force. Examines individual motivation, organization dynamics, performance appraisal, and decision making. Practices writing and speaking styles appropriate to a large organization. Prerequisite: satisfactory completion of the GMC, six weeks field training, or consent of instructor and concurrent enrollment in 300a. Non AFROTC members may enroll with instructor consent and may elect Pass/Fail.
302-3.5 Management and Leadership II. Continuation of 301. Students examine traditional and modern theories of leadership to define their own roles as leaders. Examine value conflict and conflict resolution for the middle manager. Prerequisite: 301 or consent of instructor and concurrent enrollment in 300b. Non AFROTC members may enroll with instructor consent and may elect Pass/Fail.
400-.5-1 (.5, .5) Leadership Laboratory IV. Supervised laboratory taken concurrently with 401 and 402. Students develop leadership potential by assuming command and staff responsibility. Students are responsible for implementing the goals and objectives of leadership laboratory. Emphasis on the study of facilities, services, and benefits available for junior officers in order to ensure an orderly transition to military life. Not for graduate credit.
401-3.5 Formulation of Defense Policy. Student explores the dynamics of formulating and implementing American defense policy. Examines international political trends, fundamental causes of inter-state conflict, and domestic and international constraints which restrict the options available to American defense policy makers. Prerequisite: 302 or consent of instructor and concurrent enrollment in 400a. Non AFROTC members may enroll with instructor consent and may elect Pass/Fail. Not for graduate credit.
402-3.5 Civil-Military Relations. Student analyzes crucial questions about the role and functions of the military officer. Study military law and the law of armed conflict as they apply to the junior officer. Examines contemporary issues including social values and attitudes toward the military. Prerequisite: 401 or consent of instructor and concurrent enrollment in 400b. Non AFROTC members may enroll with instructor consent and may elect Pass/Fail. Not for graduate credit.

African Studies (Minor)

African area studies is available through an interdisciplinary minor, involving courses in anthropology, Black American studies, geography, history, linguistics, political science, and religious studies. Each of these departments has one or more faculty who specialize in Africa and who are interested in assisting students wanting to study about Africa. The requirements for the African studies minor are listed below.

Minor

The African studies minor consists of 15 hours with 9 hours in required core courses and 6 hours of electives.
Required Core Courses: 9 hours selected from Anthropology 470A, Black American Studies 225, 314a, b, History 387a, b, Political Science 465.
Electives: 6 hours selected from any courses not used as part of the core or Geography 365, Linguistics 450-3 (only when African languages are studied), Religious Studies 333, or 2-3 hours of reading courses on Africa sponsored by any of the departments listed above or below.

Suggested related courses which do not count toward the minor are: Anthropology 410h, 470f, Black American Studies 311a, b, Economics 322, History 362a, b, or Political Science 452.

Aging Studies (Minor)

The minor is designed for the student with career interests in the field of gerontology and for students who wish to add an understanding of aging to their knowledge. The curriculum provides an interdisciplinary approach to understanding the aging process, basic issues related to aging and the aged, and an opportunity to acquire greater knowledge of gerontological theory and research. A component of the minor is a practicum that will assist the student in developing skills for working with and on behalf of older persons.

The basic objectives of the program are to prepare students for employment in positions of gerontology which do not require graduate education and to prepare students to go on to the graduate level to assume professional leadership in the delivery of services to older people. The minor is structured to complement courses or a major in disciplines such as sociology, social work, recreation, health education, rehabilitation, and human development.

The minor in aging studies consists of a minimum of 22 semester hours which includes ten of core courses, five of approved electives, and seven to ten of practicum. The practicum requires that the student work in a community-based aging agency. Placement may be full-time for one semester or half-time for two semesters. Terms of supervision will be consistent with the student's major area of study.

Students should check with their academic adviser as early as possible in order to plan an orderly progression of study.

Core Courses 10
Ten hours selected from Health Education 440, Psychology 305, Rehabilitation 446, 447; Social Work 463, 466; Sociology 465.

Approved Electives 5
Five hours selected from Communication Disorders and Sciences 438; Health Education 402, Mortuary Science and Funeral Service 108; Psychology 489; Recreation 475i, School of Technical Careers 415.

Practicum 7-10
The field practicum should be consistent with the student's major and career interest. If a practicum is offered in the student's major, the student should register for that practicum which will meet the requirements for the aging studies minor. If a practicum is not offered in the student's major, the student should consult the adviser for the aging studies minor about possible alternative courses to be substituted.

Other courses which relate to studies of aging are offered and students should check with individual departments. Appropriate substitutions for the aging studies minor may be approved by the adviser for the minor.

Agribusiness Economics (Department, Major, Courses)

Agribusiness economics is a dynamic and challenging field of study serving the

needs of farmers as well as businesses in agriculture. Its scope encompasses domestic and foreign agriculture. The department provides a curriculum designed to equip students with 1) professional skills in applied economics and management as related to agriculture, 2) analytical and planning abilities necessary for solving problems, and 3) knowledge and understanding to allow them to perform an effective professional role in a changing economic and social environment.

Agribusiness economics courses are offered in the following fields: farm management, agricultural prices, agribusiness management, agricultural marketing, agricultural finance, international agricultural development, land and resource use, and farm policy.

Students take additional courses in other departments in the School of Agriculture, in the College of Business and Administration, the Department of Economics, and other units of the University.

There are two specializations within the agribusiness economics major. The 40-hour option (agricultural) provides for a broad training in agriculture by requiring 40 hours of courses in the School of Agriculture. The 32-hour option (business-economics) requires the student to take more courses in business and economics and reduces the hours in the School of Agriculture to 32.

For a number of courses taught in the department, there will be an additional charge for field trips, laboratory manuals or supplies.

Bachelor of Science Degree, School of Agriculture

AGRIBUSINESS ECONOMICS MAJOR — 40-HOUR OPTION (AGRICULTURAL)

General Education Requirements and Substitutes		47-48
GE-A 106 and 115 or equivalent		6
GE-D 101, 118[1], 153		8
Mathematics 108 and 109 or 111 to substitute for GE-D 107		5-6
Requirements for Major in Agribusiness Economics		55
Courses in Agriculture		40
Agribusiness Economics 204[2], 350 or 360, 351, 362, 381-1, 450 or 461	16	
Other Agribusiness Economics	7	
Animal Industries	3	
Plant and Soil Sciences	3	
Electives in Agriculture including Agribusiness Economics	11	
Courses in Business, Economics, and Quantitative Methods	15	
Economics 214, 215	6	
Quantitative Methods[3]	9	
Electives		17-18
Total		120

AGRIBUSINESS ECONOMICS MAJOR — 32-HOUR OPTION (BUSINESS-ECONOMICS)

General Education Requirements and Substitutes		49-52
GE-A 106 and 115 or equivalent		6
GE-D 101, 118[1], 153		8
Mathematics 116 and 117 or 139 and 140 to substitute for GE-D 107		7-10
Requirements for Major in Agribusiness Economics		55
Courses in Agriculture		32
Agribusiness Economics 204[2], 350 or 360, 351, 362, 381-1, 450 or 461	16	
Other Agribusiness Economics	7	
Animal Industries	3	

Plant and Soil Sciences	3	
Electives in Agriculture including Agribusiness Economics	3	
Courses in Business, Economics, and Quantitative Methods		23
Economics 214, 215	6	
Quantitative Methods[3]	9	
Business and Economics	8	
Electives		13-16
Total		120

[1]Administrative Sciences 202 is highly recommended.
[2]Agribusiness Economics 204 substitutes for GE-B 211.
[3]Must include 3 hours of statistics and 3 hours of accounting.

Minor

A minor in agribusiness economics is offered. A minor consists of 16 semester hours of credit. Normally 12 hours must be taken at Southern Illinois University at Carbondale. An adviser within the department must be consulted before selecting this field as a minor.

Courses

204-3 Introduction to Agricultural Economics. Agriculture in local and national economy; distribution; size and organization of the farm business units; policies affecting agriculture. Elective Pass/Fail.
257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Prerequisite: consent of chairperson. Mandatory Pass/Fail.
258-1 to 30 Past Work Experience. Credit for career related employment based on the evaluation of the documentation of this experience by the Department of Agribusiness Economics. No grade for past work experience. Prerequisite: consent of chairperson.
302-2 Country Living Management and Information. Managing a small acreage as an avocation. Types of decision problems and sources of information. Elective Pass/Fail.
340-3 Economic Analysis of Food and Rural Development Policies. An economic analysis of the structure, problems, and alternative public policies of the food production industry. The dimensions and causes of rural poverty and alternatives for rural development. Prerequisite: 204 or consent of instructor. Elective Pass/Fail.
350-3 Farm Management. Efficient organization and management of a farming operation. Emphasis on crop and livestock selection, management of farm resources, farm budgets and records analysis, and farm leases. Student will incur field trip expenses not to exceed $5. Prerequisite: 204 or one course in economics. Elective Pass/Fail.
351-3 Financial Management in Agriculture. Analysis of the capital structure of agriculture and sources of capital. Credit analysis of agribusiness firms using financial statements, firm growth, capital budgeting, and tax considerations. Prerequisite: 204 or equivalent. Elective Pass/Fail.
359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agribusiness. Prerequisite: junior standing or consent of instructor. Mandatory Pass/Fail.
360-3 Cooperatives and Agribusiness Management. Problems and practices in agribusiness operations including forms of organization, alternative organization and structure impacts on decision making, tools of decision making, financial analysis and methods of improving the effectiveness of the marketing system. Prerequisite: 204 or equivalent. Elective Pass/Fail.
361-2 Distribution in Agribusiness. The nature of agribusiness distribution, opportunities to improve the effectiveness of the distribution system through an understanding of the function involved. Prerequisite: 204 or equivalent. Elective Pass/Fail.
362-3 Marketing and Pricing Agricultural Products. Institutional arrangements in marketing agricultural products. Market structure, marketing costs, and alternative methods of pricing agricultural products are also examined. Prerequisite: 204 or equivalent. Elective Pass/Fail.
363-3 Commodity Futures Market. The mechanics of futures market trading, a description of institutions, technical and fundamental analysis, speculation, hedging, spreading,

and market risk. Agricultural commodities, exchange rates, and financial instruments are considered. Elective Pass/Fail.

381-1 to 4 (1, 1, 1, 1) Agricultural Seminar. Discussion of special topics and/or problems in the field of agribusiness economics. Prerequisite: junior standing and consent of department.

388-1 to 16 (1 to 8 per semester) International Studies. Course work undertaken as part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: major department or program approval.

390-1 to 4 Special Studies in Agribusiness Economics. Assignments involving research and individual problems. Field trips. Prerequisite: consent of chairperson.

391-1 to 4 Honors in Agribusiness Economics. Completion of honors paper or comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Prerequisite: junior, GPA 3.0 with a 3.25 in major; approval of staff member, department chairperson. Elective Pass/Fail.

401-3 Agricultural Law. Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation, and other problems involving agriculture. Prerequisite: junior standing or consent of instructor. Elective Pass/Fail.

402-1 to 6 Problems in Agribusiness Economics. Designed to improve the techniques of agribusiness economics workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. Prerequisite: consent of chairperson.

440-3 Land Resource Economics. (Same as Economics 471.) The use of land as an economic variable in production of goods and services; land markets; public versus private land use conflicts; and land-use planning in an institutional setting. Prerequisite: 12 hours of agricultural economics or economics credit, or graduate status or consent of instructor. Elective Pass/Fail.

444-3 Agricultural Development. Analysis of the economic, social, political, cultural, and institutional factors related to economic growth and development in agricultural sector. Framework for evaluating outcome of alternative strategies in agricultural production, marketing, and government policies that affect output, income distribution, and resource use in agriculture and the related agroindustrial complex. Prerequisite: 204. Elective Pass/Fail.

450-3 Advanced Farm Management. Application of production economic principles and modern decision-making techniques to farm management problems. The importance of information, sources of agricultural risk and management of risk in farm planning will be integrated. Prerequisite: 350 or equivalent, and GE-D 107. Elective Pass/Fail.

451-2 Farm Real Estate Appraisal. Principles and practices of farm real estate appraisal. Application of capitalization, market, and cost approaches for estimating market value. Understanding of special valuation methods used for buildings, insurance, assessments, loans, and condemnation. Field trips not to exceed $10. Prerequisite: 350 or consent of instructor. Elective Pass/Fail.

453-3 Advanced Farm Planning Techniques. Application of linear programming to farm planning including enterprise selection, resource allocation, and least cost ration formulation. Farm decision making under uncertainty and analysis of farm expansion alternatives. Prerequisite: 350 or consent of instructor. Elective Pass/Fail.

460-3 Agricultural Prices. Measurement and interpretation of factors affecting agricultural prices. Construction of index numbers, trend analysis, seasonal and cyclical price movements and the measurement of relationships between price and other variables. Prerequisite: 362 or equivalent.

461-3 Agriculture Business Management. Function of top management in agribusiness, such as: determining objectives, developing sound and consistent policies for achieving objectives; organizing the administrative personnel to carry out the plans; guiding and maintaining the administrative organization. Prerequisite: 360.

462-3 Advanced Agricultural Marketing. An examination of contemporary institutions and determining the marketing practices of grain, livestock, dairy, and horticultural commodity producers and processors. Emphasis is placed on formulating a successful marketing strategy. Prerequisite: 362.

500-4 (2, 2) Agribusiness Economics Research Methodology.

551-3 Resource Allocation in the Agribusiness Firm.

552-3 Problems and Policies of the Agricultural Sector.

581-1 to 4 Seminar in Agribusiness Economics.

588-1 to 8 International Graduate Studies.

590-1 to 4 Readings.

593-1 to 4 Individual Research.

599-1 to 6 Thesis.

601-1 to 12 per semester Continuing Research.

Agricultural Education (Major)

In this program a student will receive the technical and professional training needed to teach applied biological and agricultural occupations in secondary schools, serve in extension, or be employed in industry. A student majoring in agricultural education may specialize in one of the following areas: agricultural production, agricultural supplies and services, agricultural mechanics, agricultural products, ornamental horticulture, agricultural resources, forestry, and other areas of agriculture in specially designed curricula.

Bachelor of Science Degree, College of Education or School of Agriculture

AGRICULTURAL EDUCATION MAJOR – SECONDARY TEACHING CERTIFICATE

General Education Requirements	45
GE-A 106, 115	6
GE-B 212 and 202	6
GE-D 101, 107, 118, 153	11
GE-E 201 and two hours of physical education activity courses	4
Requirements for Major in Agricultural Education	40
Agribusiness Economics	3
Agricultural mechanization courses	3
Agricultural Education and Mechanization 311a, b, and one of the following: 364, 411, 414	9
Animal Industries	3
Plant and Soil Science	3
Specialty in Agriculture and agriculture electives	19
Professional Education Requirements	25
See Teacher Education Program, page 66.	
Electives	10
Total	120

Agricultural Education and Mechanization
(Department, Major, Courses)

The Agricultural Education and Mechanization major includes two specializations: agricultural information and agricultural mechanization.

Agricultural Information Specialization. This specialization is intended for those students who plan to be involved in agricultural education programs in extension, post-secondary educational institutions and industry. Persons desiring to be certified for public school secondary teaching should follow the Agricultural Education major.

Agricultural Mechanization Specialization. Agricultural mechanization is the application of technology to agricultural problems in the areas of power and machinery, structures and environment, electrical power and processing, and surveying for soil and water management.

Qualified candidates for the Capstone Program are accepted in the department.

For a number of courses taught in the department, there will be additional charges for field trips, laboratory manuals or supplies.

Bachelor of Science Degree, School of Agriculture

AGRICULTURAL AND MECHANIZATION MAJOR – AGRICULTURAL INFORMATION SPECIALIZATION

General Education Requirements 45
GE-A 115 or substitute, GE-A 106 or chemistry equivalent required
GE-B 108 or 202 required
GE-D 101, 107, 153 required, 118 recommended
Requirements for Major in Agricultural Education and Mechanization 43
Agribusiness Economics 6
Agricultural Education and Mechanization
Agricultural education courses: 314 and any two of the following: 364, 411, 414 9
Agricultural mechanization courses 6
Animal Industries 6
Plant and Soil Science 6
Electives in Agriculture 10
Electives 32
Total 120

AGRICULTURAL EDUCATION AND MECHANIZATION MAJOR — AGRICULTURAL MECHANIZATION SPECIALIZATION

General Education Requirements 45
GE-A 115, 106 and Physics 203 a, b or equivalent 12
GE-D 101, 118 recommended, 153, Mathematics 108 11
Requirements for Major in Agricultural Education and Mechanization 47
Agricultural Education and Mechanization courses selected from 171, 172, 173, 174, 371, 372, 373, 374, 384, 472, 473, 474, and 483 and totaling 18
Supporting science courses: Physics 253 a,b Mathematics 109 or equivalent 5
Agribusiness Economics 3
Animal Industries 3
Plant and Soil Science and/or Forestry 6
Electives in Agriculture 12
Electives 28
Total 120

Minor

A minor in Agricultural Education and Mechanization is offered. A total of 16 hours within the department is required. A counselor with the department must be consulted before selecting this field as a minor.

Courses

171-1 Land Measurements. One module of a four module sequence in introductory agricultural mechanization. Basic survey concepts and practices for use in soil and water management. A student may take any or all modules.
172-1 Agricultural Power and Machinery. One module of a four module sequence in introductory agricultural mechanization. Internal combustion engines; tractor power, forces and efficiency; tillage machinery, metering devices, harvesting machinery, capacities of field machinery. A student may take any or all modules.
173-1 Agricultural Electrificiation. One module of a four module sequence in introductory agricultural mechanization. Fundamentals of electrical flow; measuring electrical energy; circuits; conductors and distribution systems; electric motors; electrical controls. A student may enroll in any or all modules.
174-1 Agricultural Structures and Environment. One module of a four module sequence in introductory agricultural mechanization. Farm building plans; types of construction; building materials and terminology; quantities and costs; heat loss, insulation, solar energy. A student may enroll in any or all modules.
180-1 to 2 (1, 1) Introduction to Agricultural Communications Experience. Study, observation and participation in **(a)** agricultural news activities, **(b)** graphic/photographic ac-

tivities of an agricultural extension communication office. Prerequisite: consent of instructor. Elective Pass/Fail.

257-1 to 10 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Prerequisite: consent of chairperson. Mandatory Pass/Fail.

258-1 to 30 Past Work Experience. Credit for career related employment based on the evaluation of the documentation of this experience by the Department of Agricultural Education and Mechanization. No grade for past work experience. Prerequisite: consent of chairperson.

274-2 Skills in Home Maintenance and Repair. Common home related maintenance and repair activities. Units include safety and developing the home shop; construction skills related to masonry, concrete, plumbing and painting; basic electricity and practical home wiring; and lawn, garden and recreational equipment maintenance and operation.

311-6 (3, 3) Agricultural Education Programs. Nature and scope of the different programs involved in teaching agricultural occupations and methods of developing them. There is a $10 laboratory fee for each course.

314-3 Agricultural Information Programs. Preparation for an agricultural information internship; an in-depth study into the nature, scope, integral parts, and methods of a total agricultural information program.

318-3 Introduction to Computers in Agriculture. An introductory course about the use and role of computers in agriculture. The major thrust includes a basic understanding and application of micro-computers in agriculture with special emphasis on how to save time, money, and increase efficiency in agriculture.

359-1 to 6 Intern Program. Supervised work experience in either an agricultural agency of the government or agribusiness. Prerequisite: junior standing or consent of instructor. Mandatory Pass/Fail.

364-3 Leadership of Youth and Peer Groups. (See Vocational Education Studies 364.)

371-2 Surveying and Planning. Surveying, mapping, land measurement, contouring, planning waterways and terraces and other water control structures used in the development and conservation of forests and agricultural land.

372-3 Agricultural Production Machinery. A course in selection capacities, application, performance, operation, maintenance, adjustments, and calibration of agricultural production machinery.

373-3 Small Engines and Electricity in Agriculture. A basic agricultural power course emphasizing principles, maintenance, and overhaul of small engines. The course also includes electrical circuit planning, practical wiring, a study of electric motors, and basic electrical controls. There is a $10 additional charge for this course.

374-2 Applied Graphics. Fundamentals of interpreting graphic illustrations, sketching, drawing and lettering in agriculture, forestry, and landscape design.

380-1 to 2 (1, 1) Agricultural Communications Seminar. Readings, discussions and activities related to **(a)** current problems, issues and practices in agricultural communication, **(b)** career opportunities, professional development and ethical standards in agricultural communication. Prerequisite: junior or senior standing and consent of instructor. Elective Pass/Fail.

381-1 to 4 (1,1,1,1) Agricultural Seminar. Discussion of special topics and/or problems in the field of agricultural education and mechanization. Prerequisite: junior standing and consent of department.

384-3 Agricultural Shop and Construction Processes. Principles of shop organization and safety; tool and equipment utilization as related to hot and cold metals, woodworking, plumbing, and concrete construction. There is a $15 additional charge for this course.

388-1 to 16 (1 to 8 per semester) International Studies. Course work undertaken as part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: major department or program approval.

390-1 to 4 Special Studies in Agricultural Education and Mechanization. Assignments involving research and individual problems. Field trips. Prerequisite: consent of chairperson.

391-1 to 4 Honors in Agricultural Education and Mechanization. Completion of honors paper and comparable project under the supervision of one or more faculty members. Subject matter depends upon the needs and interests of the student. Prerequisite: junior, GPA 3.0 with a 3.25 in major; approval of staff member, department chairperson. Elective Pass/Fail.

402-1 to 12 (1 to 6 per topic) Problems in Agricultural Education and Mechanization. (a) Agriculture Education, **(b)** Agriculture Mechanization. Designed to improve the techniques of agricultural education and mechanization workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. A limit of six hours will be counted toward graduation in master's degree program. Prerequisite: consent of chairperson.

411-3 Program Development in Agricultural Extension. Principles and procedures in developing extension programs with emphasis on program determination and methods. Prerequisite: junior standing.
412-2 Principles of Agriculture Mechanization. Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories. There is a $15 additional charge for this course.
414-3 Adult Education Procedures, Methods, and Techniques. Determining adult education needs and interests of the community. Securing and organizing the information needed for adult education programs and planning teaching activities.
415-3 Beginning Teacher Seminar. The application, in the professional field setting of principles and philosophies of the education system. Includes application of principles of curricula construction, programming student and community needs. Prerequisite: consent of instructor.
418-3 Micro Computing for Agricultural Education. Design of word programs and formula programs used in agricultural education applications of the micro computer. Prerequisite: 318 or equivalent.
472-3 Agricultural Tractors and Engines. Tractor performance and selection, principles of operation, maintenance analysis, and tuneup of multi-cylinder farm type internal combustion engines. There is a $5 additional charge for this course.
473-2 Advanced Agricultural Electricity. Application of electricity to agricultural problems. An emphasis on principles of electrical distribution on the farm and/or the agribusiness operation. Planning the efficient usage of electricity. Prerequisite: 379 or equivalent.
474-2 Advanced Agricultural Structures. A study of design characteristics applicable to farm structures. Emphasis is given to economics, utilization, environment, materials, and types of structures. Plans and drawings of farmstead layout, service buildings, and rural residential buildings are made. Prerequisite: 378 or equivalent.
483-3 Agricultural Materials Handling, Processing, and Storage. Arrangement of systems for animal waste disposal, feed handling and processing, and storage of agricultural products. Prerequisite: 378 or 379 or 473 or 474.
500-3 Agricultural Education and Mechanization Research Methodology.
525-3 Program Development in Agricultural Education.
526-3 Professional Development in Agricultural Education.
571-3 Current Problems and Research in Agricultural Power and Machinery.
581-1 to 8 (1 to 4 per topic) Seminar.
588-1 to 8 International Graduate Studies.
590-1 to 4 Readings.
593-1 to 4 Individual Research.
595-1 to 4 Agricultural Occupation Internship.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Agriculture (Courses)

Courses

110-3 Agriculture and Society. An introductory and general inquiry about the role and characteristics of farm and off-farm agriculture in our non-agrarian society. To acquaint students with important aspects of the various fields of agriculture and agrarian relationships to our society.
259-2 to 40 Technology in Agriculture. For credit earned in technical or occupational proficiency above the high school level (by departmental evaluation).
333-2 Agriculture and Forestry Environmental Problems. An overview course directed at the environmental problems of food, fiber and forest products, production and processing and their potential solutions. A team taught course within the School of Agriculture.
388-1 to 16 (1 to 8 per semester) International Studies in Agriculture. Course work undertaken as a part of an approved University residential study program abroad. May be taken for a maximum of eight semester hours per semester and may be repeated for a maximum of 16 semester hours. Prerequisite: School of Agriculture or department within the school approval.
401-3 Fundamentals of Environmental Education. (Same as Forestry 401 and Recreation 401.) A survey course designed to help education majors develop an understanding of environmental problems and an awareness of how these types of problems can be handled both inside and outside the classroom. Prerequisite: ten hours of biological science, or ten hours of recreation and/or education, or consent of instructor.
423-3 Environmental Interpretation. (Same as Forestry 423 and Recreation 423.) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours

laboratory. Approximately $10 cost for field trips. Prerequisite: ten hours biological science or ten hours of recreation.

481-1 International Agricultural Seminar. Discussion of special topics relating to worldwide agricultural development. Prerequisite: consent of intructor.

Agriculture, General (Major)

General agriculture is an excellent choice of agricultural major for the students who wish a flexible program which permits them ample selection of courses to satisfy their interests and abilities, as well as to attain their educational and professional goals. The minimum requirements give students a broad background in agriculture; the unusual freedom in selecting courses to fulfill these minimum requirements as well as the large number of free electives permit students to individualize their educational experience.

Production Agriculture Specialization. Students gain basic preparation for many of the agricultural careers: general farming, agricultural services, agricultural extension, agricultural communications, agricultural business, agricultural industry, and agricultural production. For students whose interest is production agriculture, typical courses which are used to fulfill the minimum course distribution among the three departments in which work is required are Agribusiness Economics 204, 350, Agricultural Education and Mechanization 372, Animal Industries 121, 122, 215, and 315, Plant and Soil Science 200, 240, and 300a.

Environmental Studies Specialization. In addition to serving as preparation for entry into the traditional agricultural and agricultural related occupations, students now find that the general agriculture major, with the study of soils, crops, forests, animals and their interrelatedness, is an excellent and practical way to study environmental and ecological problems. Choosing their agriculture and elective courses with this emphasis in mind permits students to specialize in environmental studies within the major, general agriculture. For this specialization, the general agriculture requirements remain the same; however, to fulfill the requirements, students must complete as agriculture or elective courses, thirty hours from among Agriculture 333, 401, 423; Agribusiness Economics 440; Animal Industries 455; Forestry 301, 331, 409, 430, 453; Plant and Soil Science 328A, 346, 420, 468; Economics 333; Thermal and Environmental Engineering 314; Political Science 325. Substitute courses may be approved through the office of the dean of the School of Agriculture.

Bachelor of Science Degree, School of Agriculture

General Education Requirements	48
Botany 200, Chemistry 140a, GE-A 118	12
GE-B 211 or Agribusiness Economics 204	3
Elective GE-B[1]	6
GE-C[1]	9
GE-D 101, 107, 153	9
Additional GE-A, GE-B or GE-C	3
GE-D 117, 118, or 119	2
GE-E	4
Requirements for Major in General Agriculture	44
Chemistry 140b	4
A minimum of eight semester hours in structured courses in each of three departments in the School of Agriculture[2]	24
Agricultural and Forestry Electives[2]	16

Electives	28
Total	120

[1]For environmental studies specialization, GE-B/GE-C 221 is required.
[2]School of Agriculture courses must include at least 15 hours of 300 and 400 level courses, with no less than 9 hours on the 499 level.

Minor

A minor in general agriculture with either an environmental studies or a country living specialization requires 16 hours in the respective area from the courses listed above for the specialization.

Allied Health Careers Specialties (Program, Specialized Major)

Individual courses of study leading to specialties in allied health career fields are offered by the School of Technical Careers through programs which combine clinical experience with appropriate courses from throughout the University, from community colleges, and from other educational institutions.

Each student works with an adviser to design a core curriculum and clinical experience in an appropriate clinical setting. The student may study in such fields as laboratory/skills, radiologic technology, and respiratory therapy.

Because programs are individually designed, prospective students must consult with the faculty about course and program requirements. Persons interested in the allied health careers specialities program should contact the director of the Division of Allied Health and Public Services.

The program is intended to accommodate the non-traditional student. Enrollment is limited by the availability of clinical facilities and supervising faculty; prospective students are urged to begin the admission and advisement process well in advance of the semester in which they wish to begin their studies.

Additional expenses will be incurred to cover the cost of uniforms, liability insurance, travel, laboratory fees, etc.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Allied Health Careers Specialties

GE-D 101, 107, and 152	9
School of Technical Careers 107a	2
Allied Health Careers Specialities 141	4
Electives/support courses which will change according to areas of concentration	14
Clinical phases will consist of a minimum of	36
The clinical phase of the curriculum requires the selection of two allied health careers specialty areas.	
Total	65

Courses

101-1 to 4 Introduction to the Clinical Laboratory Technology. Introduces the student to the field of medical technology and the basic concepts of the clinical laboratory. By utilizing principles from the sciences and applying to a clinical situation, the student will develop skills, safety awareness, and interpersonal relationships. Prerequisite: consent of program adviser.

102-4 Introduction to Radiologic Technology and Radiographic Technique. Designed to introduce the student to the medical radiography profession. Students will begin their study

of medical terminology, professional behavior, ethics, theory of radiographic exposure, and radiation protection. Prerequisite: admission to program and consent of program adviser. Elective Pass/Fail for nonmajors only.

104-4 Introduction to Medical Assisting. Introduction to the roles and functions of the medical assistant. Emphasis is placed on personal and community health, medical law and ethics.

105-2 Medical Terminology. Introduction to the study of medical language with a working knowledge of the most common word roots, prefixes, suffixes in medical terminology. Emphasis placed on spelling, pronunciation, use of the medical dictionary, vocabulary building, common abbreviations, and charting terms.

112-3 Anatomy and Positioning I. Designed to provide the student radiographer with didactic instruction and laboratory experience which will lead to the development of clinical competencies. It will serve as a foundation for the development of advanced clinical skills as well. The competencies developed are chest, abdomen, upper and lower extremities. Prerequisite: admission to program and consent of program adviser. Laboratory fee: $50. Elective Pass/Fail for nonmajors only.

114-4 Medical Assistant Clinical Procedures I. To familiarize the medical assistant student with preparing the patient for examination in the physician's office; taking temperature, pulse, respiration, blood pressure, assisting the physician; care and preparation of sterile equipment, methods of sterilization; knowledge and care of instruments and ordering supplies. Prerequisite: 104.

124-2 Disease Conditions. Introduction to the study of diseases and disorders of the various body systems. The disease processes as they relate to bodily functions, their signs, symptoms, and treatment will be covered within the scope of medical assisting. Prerequisite: 105.

125-1 to 4 Survey of Allied Health Related Sciences. Emphasizes the concept of health and the basic needs of people, both in a state of health and as altered by illness. This includes the principles of the physical, biological and behavioral sciences and the knowledge basic to the proper understanding of various allied health procedures. Prerequisite: consent of the program adviser.

132-3 Anatomy and Positioning II. A continuation of 112 designed to further develop clinical skills and competencies through continued didactic and laboratory experience. Positioning competencies developed in this course include radiography of the pelvic girdle, spine, and digestive system. Eight weeks. Prerequisite: 112 and consent of program adviser. Elective Pass/Fail for nonmajors only.

141-4 Introduction to Physiology and Human Anatomy. The student will survey the functions and structures of the nine basic body systems: circulatory, digestive, endocrine, excretory, muscular, nervous, skeletal, reproductive, and respiratory.

151-1 to 10 Clinical Laboratory Techniques. Specific tasks in the areas of urinalysis, coagulation, hematology, and serology are taught. Emphasis is on the development of background information, clinical knowledge, and clinical skills. Clinical information obtained through the performance of tasks is evaluated and related to its function in the clinical setting. Methods for data gathering and problem solving are developed. Prerequisite: consent of program adviser.

152-1 to 10 Clinical Radiologic Techniques. Basic radiographic anatomy and positioning of the extremities, chest and abdomen, techniques and practice in specialized radiographic procedures will be taught. Emphasis is placed on patient handling, radiation safety, darkroom procedures, and application of electrical and radiation physics. Clinical skills, clinical knowledge and clinical information obtained through the performance of tasks are validated and related to their function in the clinical setting. Prerequisite: consent of program adviser.

201-1 to 10 Clinical Laboratory Techniques. Specific tasks in the areas of blood banking, clinical bacteriology, and clinical chemistry are taught. Emphasis is on the development of background information, clinical knowledge, and clinical skills. Clinical information obtained through the performance of tasks is evaluated and related to its function in the clinical setting. Methods for data gathering and problem solving are developed. Prerequisite: consent of program adviser.

202-3 Radiographic Physics. This course will concentrate on general theories of physics as they relate to matter, mechanics, and electricity. It also involves a study of the nature and production of radiation and an understanding of the complexity of radiographic equipment and circuitry. Prerequisite: 102 and 112.

203-5 Principles of Respiratory Therapy. Introduction to the state of the art and fundamental principles and devices used in respiratory care practices. Significance is given to indications and contraindications for therapeutic modalities, appropriate equipment selection, airway management, and rehabilitative practices. Five hours lecture per week. Prerequisite: consent of instructor. Elective Pass/Fail with consent of program supervisor.

204-3 Medical Assistant Clinical Sciences: Radiology and Physical Therapy. Aide-level competencies in radiologic tehcnology and physical therapy will be achieved. Emphasis placed on the use of these skills within a physician's office. Prerequisite: 105.

209-4 Water Analysis I. Overview of major problems related to the waste and drinking

water. Introduction to the terminology and basic concepts. Student will be taught the role and importance of sampling in obtaining water quality data. In addition to sampling techniques, the student will learn to evaluate sampling data. Two hours lecture; four hours laboratory. Prerequisite: consent of instructor.

212-2 Special Procedures. Includes the study of contrast producing agents which are used to visualize specific parts of the body. Radiographic technique employed in this type of imaging is highly specialized and will be studied in depth. Prerequisite: 222, 372a and consent of program adviser. Elective Pass/Fail for nonmajors only.

213-1 Respiratory Therapy Exercises. Concepts and theories are applied in a laboratory setting to enhance a working knowledge with respiratory therapy equipment, physical principles, and pulmonary therapeutic techniques. Two laboratory hours per week. A $25 laboratory fee is required. Prerequisite: concurrent enrollment in 203. Elective Pass/Fail with consent of program supervisor.

214-4 Medical Assistant Clinical Procedures II. To familiarize the medical assistant with the metric system, basic pharmacology, and preparation of medication; proper techniques for drug administration, oral, parenteral, and topical; observing and doing EKG procedures; emergency medical care and first-aid and cardiopulmonary resuscitation. Prerequisite: 114.

219-5 Water Analysis II. Student will be taught to analyze all the basic water parameters. Student will develop skill in performing these parameter tests on a variety of sample types, including natural, wastewater, and sludges. Three hours lecture; five hours laboratory.

222-10 Radiography Clinic I. The student is assigned to a selected clinical education center for the entire semester. During this semester, the student radiographer is expected to practice and perfect the professional skills developed the previous semester on campus. The student is supervised by a qualified radiographer and directed in specific experiences designed to meet the objectives for the semester. Prerequisite: 102, 112, 132, 202.

223-2 Patient Care Techniques. Basic principles and essential skills necessary to perform patient care safely and effectively. Skills include surgical asepsis, terminology, communication, patient assessment and positioning, medical ethics, and behavioral problems unique to patients with respiratory illnesses. Two lecture hours per week. Prerequisite: consent of program adviser. Elective Pass/Fail with consent of program supervisor.

224-6 (2, 4) Medical Assisting Internship. Medical assisting experience in both front-office and back-office skills will be obtained by placement in a local physician's office under close supervision. (a) Administrative/clerical practice will be gained. (b) Clinical experience as well as those advanced administrative procedures not completed in (a) will be covered. To be taken in conjunction with 234. Prerequisite: 214.

229-3 Solid Waste Management. An introductory field course in solid waste management. Students will be introduced to the day-to-day operations of a sanitary landfill such as what the landfill operator needs to know to perform the duties and what the manager must do to insure proper environmental compliance. Also covered will be aspects of solid waste management from collection to regulations, as well as resource recovery options.

232-4 Selected Systems Radiography. Designed to instruct the student in the anatomy and positioning of the skull, digestive, excretory, biliary, and human reproductive systems. Routine projections common to most health facilities will be described, demonstrated, and then practiced on a phantom in the energized lab. A $25 laboratory fee is required. Prerequisite: 222, 372a and consent of program adviser.

234-3 (1, 2) Medical Assisting Seminar. Students will review patient care, office procedures, medical forms, and all other aspects of the administrative/clinical duties performed in their internship. Specific needs and problems encountered in the individual offices will be discussed. 224a and 234a must be taken concurrently. 224b and 234b must be taken concurrently. Prerequisite: 214.

243-3 Basic Cardiopulmonary Physiology. Physiological functions are presented which include acid-base relationships, gas perfusion, controlling mechanisms of ventilation, ventilation/perfusion relationships, hemodynamics of the cardiopulmonary and renal systems, and blood gas analysis. Three lecture hours per week. Prerequisite: consent of program adviser.

253-1 Clinical Practice I. Orientation to the clinical setting with special emphasis on basic procedures and the role of the respiratory therapy department as part of the health care system. One eight-hour session per week. Prerequisite: 203.

263-2 Principles of Mechanical Ventilation. Introduces mechanical function of equipment used in continuous and intermittent ventilation of adult, pediatric, and neonatal patients. Indications, contraindications, and hazards of continuous ventilation are presented with significance given to ventilatory management and monitoring techniques. Two lecture hours per week. Prerequisite: 203 and concurrent enrollment in 273.

273-1 Mechanical Ventilation Laboratory. Emphasis on functional mechanical ventilation characteristics, the assembly of patient circuits, ventilator monitoring, and weaning techniques. Also included is the analysis of arterial blood gas parameters and assessment of the ventilator patient. Two laboratory hours per week. A $25 laboratory fee is required. Prerequisite: concurrent enrollment in 263.

283-2 Survey of Pulmonary Diseases. The study of the nature and cause of pulmonary

diseases which involve changes in structure and function. The etiology, pathogenesis, clinical manifestations, laboratory data, and treatment for major chronic and acture pulmonary disease entities will be presented. Three lecure hours per week. Prerequisite: 243. Elective Pass/Fail with consent of program supervisor.

293-2 Clinical Practice II. Supervised clinical experience which emphasizes fundamental respiratory therapy procedures and introduces the student to critical care management. Sixteen clinical hours per week. Prerequisite: 253.

300-1 to 3 Seminar in Allied Health. A topical seminar conducted by staff members or distinguished guest lecturers on pertinent areas of allied health. Prerequisite: consent of instructor and department. Elective Pass/Fail with consent of program supervisor.

302-6 Clinic III. The experience obtained in 302 is an extension of the knowledge learned in 122 and 222. The time spent in training will allow the students to put to use the practices they have previously learned and continue to use the radiation protection techniques and ethical behavior they have already learned from previous courses.

312-3 Radiographic Pathology. Deals with the etiology and processes of trauma and disease. Emphasis will be placed on radiographic pathology of the body systems and the manifestation of this pathology. Prerequisite: 302, 372b, and consent of program adviser. Elective Pass/Fail for nonmajors only.

313-3 Respiratory Pharmacology. The study of drugs; their origin, nature, properties, and effects on living tissues. Significance is given to drugs which reflect changes on the cardiopulmonary and renal systems. Three lecture hours per week. Prerequisite: 243. Elective Pass/Fail with consent of program supervisor.

322-4 Cross-Sectional Anatomy and Radiographic Computerization. Includes the study of anatomical structures from the transverse section perspective as compared to the two dimensional perspective. Also included is an introduction to the use of computers in the radiology department. Emphasis will be placed on computer programming for imaging and administrative purposes. Prerequisite: 302, 372b, and consent of program adviser.

323-3 Respiratory Pathophysiology. Discussion of pulmonary complications with obstructive and restrictive disease components and their relationships with pulmonary function studies and blood gas analysis. Emphasis is given to patients with complications directly or indirectly affecting respiration. Three lecture hours per week. Prerequisite: 283.

332-10 Radiography Clinic II. The student returns to the clinical education center for this semester. The student radiographer is expected to continue to practice previously developed professional skills and to assume performance of additional examinations studied during the previous semester. This semester of clinical study includes proficiency testing which, when completed, will allow the student to assume full responsibility for the examination in the future.

342-2 Radiation Biology, Therapy, and Nuclear Medicine. Designed to instruct the student radiographer in the principles and terminology of radiobiology. Emphasis will be placed on how these principles relate to radiation protection. Also included are brief introductions to nuclear medicine and therapy. Prerequisite: 302, 372b, and consent of program adviser. Elective Pass/Fail for nonmajors only.

343-2 Neonatal/Pediatric Respiratory Care. Respiratory care of the neonate and pediatric patient is presented with special emphasis on physiology, pulmonary complications, and related general and intensive care procedures. Also included is neonatal transportation and assessment of the sick newborn and child. Two lecture hours per week. Prerequisite: 243. Elective Pass/Fail with consent of program supervisor.

352-4 Special Imaging Modalities. This course provides the student with the knowledge and understanding relevant to the function, operation, and application of the various techniques used in image production.

353-8 Clinical Internship. Integration of clinical practice and knowledge for the advanced student. Students receive clinical experience in neonatal and adult intensive care units with an emphasis in ventilatory management. Students should plan to attend a major medical institution off campus for sixteen weeks in the fall. Prerequisite: 293.

362-4 Radiography Clinic III. Last clinical course of the program. Students are expected to demonstrate knowledge and competency of radiographic examinations listed in categories one through nine. Image evaluations will be performed on a weekly basis by the clinical instructor as well as behavioral/attitudinal ratings. Prerequisite: 312, 322, 342, 352.

363-3 Pulmonary Evaluation and Monitoring. Emphasis on diagnostic and monitoring principles used in determining clinical evaluation of patients. Cardiopulmonary assessment is presented utilizing electrocardiography, chest roentgenology, laboratory tests, and physiologic shunt and deadspace calculations. Three lecture hours per week. Prerequisite: 283. Elective Pass/Fail with consent of program supervisor.

372-6 (2, 2, 2) Radiographic Film Critique. **(a)** Concurrent with clinical study, the student will participate in the technical review fo the films taken fulfilling introductory objectives set for this course. Prerequisite: 102, 112, 132, 202. **(b)** The student will continue to develop abilities to review an examination from a technical standpoint utilizing more advanced knowledge to fulfill course objectives. Prerequisite: 212, 232. **(c)** Final competencies in the technical production and review of the finished radiograph are determined and evaluated.

Also included is a review of the knowledge learned in the program. Prerequisite: 312, 322, 342, 352 or consent of program adviser.

373-4 (2,2) Clinical Practice III. (a) Supervised clinical experience emphasizing diagnostic and monitoring procedures used in evaluating patients with cardiopulmonary complications. (b) Research seminar: a faculty supervised research project identifying rural clinical problems relevant to respiratory therapy is completed by the student. Prerequisite: 353.

Animal Industries (Department, Major, Courses)

Instruction, research, demonstration, and consultation are provided in dairy, horse, livestock and poultry production, meats, pets, and animal hygiene. Courses are offered in all phases of animal production and management.

The student has opportunity to select courses in other areas of agriculture or related fields, such as business, biology, or physical sciences. This selection allows students to include in their studies the agronomic, agricultural economic, and agricultural engineering phases of agriculture or business as related to animal production.

In addition to the production, and the science and pre-veterinary medicine options, the department also offers a two-year and a three-year curriculum in pre-veterinary medicine. These allow qualified students to transfer to accredited colleges of veterinary medicine prior to receiving the Bachelor of Science degree in animal industries.

A major in animal industries may not take a departmental course on an elective Pass/Fail basis if the credits are to be applied toward the required thirty hours in animal industries courses. Majors may take departmental courses beyond the thirty hour requirement on an elective Pass/Fail basis.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, School of Agriculture

ANIMAL INDUSTRIES MAJOR — PRODUCTION OPTION

General Education and Substitutes	50-51
Substitute Chemistry 140a, b or equivalent for GE-A 106	8
Substitute Biology 306, 308, 309 or Botany 200 for GE-A 115 or take GE-A 118	3-4
GE-D 153 required	3
Requirements for Major in Animal Industries	46
Animal Industries 121, 122, 123, 210 or 311a, 215, 312, 315, 332, 381 plus one course from 420, 430, 465, 480 or 485	21-23
Animal Industries electives including one additional 400-level course	7-9
Agriculture electives excluding Animal Industries courses	8
Microbiology	4
A physiology course approved by the department	4
Electives	23-24
Total	120

ANIMAL INDUSTRIES MAJOR — SCIENCE AND PRE-VETERINARY OPTION

General Education and Substitutes	60
Substitute Chemistry 222a, b or equivalent for GE-A 106	8
Substitute Physics 203a, b and 253a, b for GE-A 101	8
Substitute Mathematics 108 and 109 for GE-D 107	6
Biology	8
GE-D 153 required	3

Requirements for Major in Animal Industries	61
Organic Chemistry and Biochemistry	15
Microbiology	4
Animal Industries 121, 122, 123, 210 or 311a, 215, 312, 315, 332, 381 plus one course from 420, 430, 465, 480, or 485	21-23
Animal Industries including one additional 400-level course	7-9
Agriculture electives excluding Animal Industries courses	4
A physiology course approved by the department	8
Total	121

Minor

A minor in animal industries is available to those interested in livestock production and care of companion animals. A total of 16 hours within the department is required. Courses may be selected from the areas of nutrition, hygiene, breeding and genetics, reproductive physiology, meats, and livestock production, including horses and pets. An adviser within the department must be consulted before selecting this field as a minor.

Courses

121-3 Science of Animals that Serve Mankind. A general overview of dairy, meat animals (swine, beef, sheep), poultry, and horse industries with emphasis on how meat, milk, and poultry products are produced and distributed. The general application of genetic, physiologic, and nutrition principles for the improvement of animal production to further serve people. Prerequisite: concurrent enrollment in 122.

122-1 Production and Processing Practices of the Animal Industry. Livestock facilities, demonstration of management practices of animals for human use and the processing of animal products. Can be taken without concurrent enrollment in 121. Elective Pass/Fail.

123-1 Practicum in Animal Production. A set of practical experiences at each livestock center and a proficiency examination. Required of all majors in animal industries before graduation. Mandatory Pass/Fail.

201-3 Care and Management of Pets. Principles and practices of proper selection, feeding, and care of companion animals. Emphasis is placed on the dog and cat but other species are considered. Nutrition, health care, behavior, training, and reproduction are discussed. Elective Pass/Fail.

210-3 Meat, Poultry and Milk Products as Related to the Consumer. Processing and distribution including inspection, grading, processing methods and merchandising as well as selection and preparation including pricing, storage or preservation, cooking, serving and the contribution to a well-balanced diet of meat, poultry and milk products. Field trip. Elective Pass/Fail.

215-2 Introduction to Animal Nutrition. An up-to-date study of basic principles of animal nutrition including classification of nutrients (physical and chemical properties) and their uses in order to provide the student a working knowledge of livestock nutrition in today's animal environment. Prerequisite: Chemistry 140 or equivalent. Elective Pass/Fail.

220-2 Equitation. Equitation as related to horse training and management. For students who have completed 319, have limited riding experience, and need equitation training to enter 419. Field trip. Enrollment limited. Additional costs $15. Prerequisite: consent of instructor. Mandatory Pass/Fail.

257-1 to 10 Work Experience. Credit given for on-campus work experience related to the student's major area of specialization as developed through the department and the Office of Student Work and Financial Assistance. Only 10 hours of credit may be taken in 257, or in any combination with 258. Prerequisite: consent of chairperson. Mandatory Pass/Fail.

258-1 to 10 Prior Work Experience. Credit given for work experience related to the student's major area of specialization prior to University entrance. Only 10 hours of credit may be taken in 258, or in any combination with 257. No grade for prior work experience. Prerequisite: consent of chairperson.

311-4 (2, 2) Breeds, Classes, Grades, and Selection of Farm Animals and Poultry. (a) Discussion of breeds and classes of livestock, dairy and poultry; grading and selection of breeding and market animals and their carcasses of products. **(b)** Competitive judging and selection of livestock, dairy, or poultry. Field trips required. Participation on SIUC judging team is not a required part of this course. Must be taken in a,b sequence. Prerequisite: 121 recommended. Elective Pass/Fail.

312-2 Anatomy, Growth, and Development. Anatomy, gross and microscopic, and development processes of bone, muscle and fat tissue of meat animals and the factors which influence their relative rates of formation during the growth process and thus alter body composition and product quality. Prerequisite: Chemistry 140 or equivalent.
315-3 Feeds and Feeding. Principles of applied animal nutrition. Ration formulation to meet specific nutrient needs of all classes of livestock. Feedstuff evaluation, including cost will be discussed. Prerequisite: GE-D 107.
319-3 Horses. An introductory course designed for students with interest in horses regardless of their major or background. Lectures, demonstrations, and laboratory work with horses provide basic information and terminology as well as principles and practices of proper selection, use, care, and management of horses. Field trip. Elective Pass/Fail.
331-3 Functions of Animal Systems. A course in the physiology of domestic animals. Various functions of mammalian organisms are discussed using the organ system approach. Human physiology is used as a basis to present the systemic functions of domestic animals. Differences in the functions of monogastric, ruminant, and avian species are presented.
332-3 Animal Breeding and Genetics. The application of basic principles of genetics and breeding systems to the improvement of farm animals and poultry. Prerequisite: 121 or biology. Elective Pass/Fail.
337-3 Animal Hygiene. Principles of prevention and control of infectious, nutritional, and parasitic disease of farm animals. Prerequisite: a course in chemistry. Elective Pass/Fail.
359-2 to 6 (2 to 3, 2 to 3) Intern Program. Work experience program in animal production units and agricultural agencies of the government or agribusiness. Prerequisite: junior standing and consent of chairperson. Mandatory Pass/Fail.
380-1 to 6 Field Studies in Foreign and Domestic Animal Agriculture. A travel course to observe and study the operation and management of farms, ranches, and feedlots as well as agribusiness firms supporting animal production such as food processors, feed manufacturers, and housing or equipment companies in either the United States or foreign countries. A written report is required. The travel fee charged to the student will depend on the nature and the length of the course. Elective Pass/Fail.
381-1 Animal Science Seminar. Discussion of problems and recent development in animal science. Prerequisite: junior-senior standing.
390-1 to 4 Special Studies Animal Industries. Assignments involving research and individual problems. Prerequisite: juniors and seniors only and consent of chairperson. Mandatory Pass/Fail.
410-3 Meat Science. Chemical, physical and nutritional properties of meat and meat products. Topics covered include muscle function, tissue growth and development, aspects of post mortem change including rigor mortis, meat microbiology, methods of analysis and quality control. Prerequisite: 210, Chemistry 140 or equivalent, and a course in physiology.
414-2 Animal Feed Quality Control. Laboratory procedures for nutrient determinations used in animal feed quality control. Prerequisite: Chemistry 140 or equivalent.
415-3 Monogastric Nutrition. Advanced principles and practices involved in meeting nutrient requirements of monogastric animals. Prerequisite: 215 and 315.
416-3 Ruminant Nutrition. Practical knowledge gained of problems associated with digestion, absorption, and metabolism of nutrients as related to domestic ruminants, horses and other pseudoruminants. Prerequisite: 215 and 315.
419-3 Stable Management and Horsemanship. Laboratory experience in routines of horse care, training, and management. Field trips. Additional costs $5. Prerequisite: 319.
420-4 Commercial Poultry Production. Principles and practices of management of broilers, layers, and turkeys as adapted to commercial operations. Field trip. Prerequisite: 315 or consent of instructor.
421-2 International Animal Production. A study of world animal production practices with emphasis on the developing countries. Adaptability of animals to environmental extremes and management practices employed to improve productivity. Prerequisite: junior standing plus 121 or one year of biological science. Elective Pass/Fail.
430-4 Dairy Cattle Management. Application of the principles of breeding, physiology, and economics to management of a profitable dairy herd. Breeds of dairy cattle, housing, milking practices, and quality milk production. Field trip. Students enrolled will incur field trip expenses of approximately $25. Prerequisite: 315, 332.
431-4 Reproductive Physiology of Domestic Animals. Comparative anatomy and physiology of the male and female reproductive system of domestic animals; hormones, reproductive cycles; mating behavior; gestation and parturition; sperm physiology; collection and processing of semen; artificial insemination, pregnancy tests; diseases. Prerequisite: 121 or a course in physiology.
432-2 Quantitative Inheritance of Farm Animals. A review of the genetic principles underlying changes in animal breeding population; interpretations of gene frequency, heritability, and genetic correlations; application of selection and breeding systems in farm animals. Prerequisite: 332. Elective Pass/Fail.

434-2 Physiology of Lactation. Anatomy and physiology of milk secretion; endocrine control; milk precursors and synthesis; milk composition; physiology and mechanics of milking, mastitis. Prerequisite: course in physiology.
455-2 Animal Waste Management. Acquaints the student with the scope and problems involved with animal waste management, current regulations and laws on environmental protection. Principles covering waste management technology and current livestock waste management systems are presented. Field trips will be scheduled. Prerequisite: junior standing.
465-4 Swine Production. Swine production systems and management techniques including breeding and selection, reproduction, nutrition, herd health and disease prevention, housing and waste management, marketing, production costs and enterprise analysis. Field trip. Prerequisite: 315 and 332 or consent of instructor.
480-3 Sheep Production. Breeding, feeding, and management of sheep. Field trip. Prerequisite: 315.
485-4 Beef Production. Beef cattle production systems and management, breeding and selection, reproduction, nutrition, and herd health with emphasis on the most economical and efficient systems. Field trip. Students enrolled will incur field trip expenses of approximately $5. Prerequisite: 315 and 332 or consent of instructor.
500-3 Research Methods in Agricultural Science.
502-2 Surgical Research Techniques in Farm Animals.
506-3 Instrumentation Methods in Agricultural Science.
515-3 Energy and Protein Utilization.
516-3 Minerals and Vitamins in Animal Nutrition.
531-2 Livestock Management for Reproductive Efficiency.
581-1 to 2 (1, 1) Seminar.
588-1 to 8 International Graduate Studies.
590-1 to 3 Readings in Animal Industries.
593-1 to 3 Individual Research.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Anthropology (Department, Major, Courses)

Anthropology is the study of humans and their cultures in terms of universal features, variability, and development through time. The major subdivisions are socio-cultural anthropology, linguistics, archaeology, and physical anthropology. The student is expected to gain a broad background in all subfields, after which the options of further general study or specialization are available. Students are encouraged to supplement their anthropological studies with work in other social sciences, and where appropriate in biology, earth sciences, humanities, mathematics, or other areas.

Most professional anthropologists find employment as teachers and researchers in colleges and universities. However, a major in anthropology provides the students with a unique liberal arts background bridging the humanities, social, earth, and biological sciences, which leads to many other professional opportunities outside of teaching and research.

An anthropology major is required to take Anthropology 300A, B, C, D, and one each of the 410 and 470 course series. No more than six hours of Anthropology 460 and no more than six hours of 200-level course work may be applied toward the major. Those students interested in advanced degrees will be advised to take Anthropology 400A, B, C, D (total 12 hours) with the remainder of the hours as electives. It should be noted that graduate departments often require foreign language and mathematical background beyond that required by the undergraduate program. Those students not interested in advanced study will be advised on an individual basis reflecting their own particular interests and aspirations.

Students with exceptional scholarly promise may be invited into the departmental honors program, which includes an honors seminar and the writing of an honors thesis under the direction of a departmental faculty member.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	45
Supplementary College Requirements (See page 75)	(4) + 8-14
Requirements for Major in Anthropology	32
Anthropology 300A, 300B, 300C, and 300D required, and an additional nine hours of 400-level course work in anthropology.	
Electives	29-35
Total	120

Minor

A minor in anthropology consists of at least 15 hours including at least two of the four courses: 300A, 300B, 300C, 300D, and a minimum of three of the remaining nine hours at the 400 level.

A minor in anthropology for students interested in museum studies may be earned by taking a designated series of museum-oriented courses offered by the Departments of Anthropology, Geology, History, and the School of Art. Required courses for the minor are drawn from the following: Anthropology 450a,b; Art 207, 447; Geology 445; and History 497, 498.

Courses

201-3 Archaeology of Illinois. A survey of prehistoric cultural development, its causes and consequences, as seen through the archaeology of Native American cultural development in the Illinois region, from the earliest foragers to European contact.

203-3 World Archaeology: Humans Before History. A worldwide survey of the evolution of human behavior from earliest times to the beginnings of civilization.

221-3 The Anthropology of Sexual Behavior. Introduces the student to general primate ethology where sexual behaviors are seen to be a function of band needs. Patterns of sexuality are then examined on a cross-cultural basis where attitudinal and cultural distinctions between men and women are related to socio-cultural needs and pressures. The course will conclude with an examination of modern western sexism.

225-3 Separate Realities. The focus of this course is on an anthropological approach to other realities. The works of Castaneda and Bourguignon, among others, are considered, and the functions of these states in societies, including our own, are dealt with.

231-3 Folklore and Modern Life. The folklore of a culture influences both the unconscious and conscious actions of people in subtle ways and each study helps to account for both the good and the bad which we see in ourselves and in others. The course introduces the student to the study of folklore and serves to emphasize the importance of the study of folk beliefs and their role in understanding our and other contemporary societies.

241-3 Slaves and Slavery in New World Societies. Focuses on slavery and slave systems in New World societies from a comparative historical and social anthropological/sociological perspective.

251-3 Anthropology and Science Fiction. An examination of the basic concepts of anthropology viewed through the prism of science fiction literature.

261-3 Issues in Popular Anthropology. A presentation of issues of popular interest which can be clarified through anthropological examination. Among these are the issues of creationism versus evolution, ancient astronauts, the Abominable Snowman, the lost civilization of Atlantis, primitive languages and peoples, and the diversity of sexual practices. The course traces the origins of these issues and beliefs as aspects of American popular culture.

300A-3 Introduction to Physical Anthropology. An introduction to the study of human evolution. Topics include: evolutionary theory and its history, human genetics, nonhuman primates, the human fossil record, and the origins of races. No prerequisites.

300B-3 Introduction to Linguistic Anthropology. Introduces the concept of culture as revealed through human language. Provides both theory and methodology basic to linguistics and non-linguistic specialists within anthropology.

300C-3 Introduction to Archaeology. Theory and method of anthropological archaeology for non-majors and majors.

300D-3 Introduction to Social-Cultural Anthropology. Ways in which humans organize themselves for action. Emphasis will be on the social anthropological approaches to problem definition and theory. Comparative and functional analysis of kinship, economic, political, religious, and legal systems of non-Western cultures.

301-3 Language in Culture and Society. A survey of the cultural and social nature of language for the non-specialist. Topics include human and animal communication, diversity and universals of human language, expressive use of language, the relation of language and world view, social aspects of language, language and meaning.
302-3 Indians of the Americas. A region by region survey of the native Americans of North, Middle, and South America. Emphasis is on lifeways: ecology and environment, subsistence, economy, social organization, religion, art, music, and other aspects of culture. A brief introduction to pre-history and language is included.
304-3 Origins of Civilization. A study of complex environmental and cultural factors that led to a rise and fall of early high-cultures. The course will concentrate in alternate years on the Old World (Africa and Euro-Asia) and the New World (North, Middle, and South America).
320-3 Human Growth, Development, and Adaptation. The effect of environmental and genetic factors on human development will be examined. Certain classical problems will be studied as they relate to human adaptation, e.g. the physiology of high altitude adaptation, and human thermoregulatory adaptations. Prerequisite: 300A or consent of instructor.
376-2 to 8 Independent Study in Classics Program. (See Classics 496.) Elective Pass/Fail.
400A-3 Theory and Method in Physical Anthropology. Current topics in biological evolution and variation, including the theoretical and methodological background to each. Topics will be drawn from the four major areas of physical anthropology: genetics and evolutionary theory, primate studies, human fossil record, and human variation. Prerequisite: 300a for undergraduates or consent of instructor.
400B-3 Theory and Method in Linguistic Anthropology. History of linguistic anthropology. Description and analysis of languages. Origin, development, and acquisition of language. Theory of symbolic systems. Human and animal communication. Historical linguistics. Languages in culture and society. Prerequisite: 300b for undergraduates or consent of instructor.
400C-3 Theory and Method in Archaeology. Overview of the currents and controversies in anthropological archaeology in their historical and theoretical context. Topics include history of archaeological theory, explanation in archaeology, limitations of the archaeological record, and archaeological approaches to the study of cultural variation. Prerequisite: 300c for undergraduates or consent of instructor.
400D-3 Theory and Method in Sociocultural Anthropology. Overview of contemporary approaches to social and cultural research in anthropology. Attention is given to such topics as structural functionalism, cultural ecology, dialectical and cultural materialism, ethnoscience, sociobiology, neo-Darwinism, symbolism, and cross-cultural comparison. Problem areas investigated include kinship, social structure, comparative economics, political organization, religion, culture and personality, environmental adaptation, cultural change. Prerequisite: 300d for undergraduates or consent of instructor.
402-3 People and Culture. Offered primarily for non-anthropology majors. Focuses on the nature of culture, cultural processes, and culture change with emphasis on social, political, economic, artistic, religious, and linguistic behavior of humans as individuals and in cultural groups.
404-3 Art and Technology in Anthropology. An introduction to the basic ways in which people utilize the natural resources of their habitat to meet various needs, such as food, shelter, transportation, and artistic expression. The nature of art, its locus in culture, and its integration into technological society will be considered.
406-3 Conservation Archaeology. The method and theory of archaeology in relationship to local, state, and federal laws regarding the protection and excavation of antiquities. Emphasis is on problem-oriented survey and excavation, as well as the preparation of archaeological contracts and the writing of reports to satisfy statutes involving environmental concerns. Prerequisite: 300C or 400C or consent of instructor.
409-3 History of Anthropology. The development of anthropological thought in the four subfields of the discipline (sociocultural, physical, linguistics, archaeology). Emphasis is on concepts, ideas, and work of major practitioners of the early 19th to the middle of the 20th centuries, and on the major trends that have led to specialities found in anthropology today. The present status of anthropology as an academic discipline is briefly explored, and an attempt is made to assess the future of the discipline in terms of intellectual and practical concerns.
410A-3 Applied Anthropology. The practical applications of theoretical social anthropology. Problems of directed culture change are examined from an anthropological perspective as they apply to the work of the educator, social worker, extension agent, administrator and others who are attempting to guide change in the life ways of others in Western culture and the third world. Prerequisite: none. 300D recommended for undergraduates.
410B-3 Educational Anthropology. An examination of the cultural processes of formal and informal education, the use of anthropological premises in educational program design, bicultural-bilingual education programs, comparative American-non-American systems, and the teaching of anthropology. Prerequisite: none. 300D recommended for undergraduates.

410C-3 Economic Anthropology. The study of non-Western economic systems. Prerequisite: none. 300D recommended for undergraduates.
410D-3 Anthropology of Folklore. A comparative study of the role of folklore in various cultures of the world, with emphasis upon nonliterate societies. Analysis of motifs, tale-types, themes and other elements; comparisons between nonliterate and literate groups. Prerequisite: none. 300D recommended for undergraduates.
410E-3 Anthropology of Law. Anthropological thought on imperative norms, morality, social control, conflict resolution and justice in the context of particular societies, preliterate and civilized. Law of selected societies is compared to illustrate important varieties. Prerequisite: none. 300D recommended for undergraduates.
410F-3 Anthropology of Religion. A comparative study of (religious) belief systems, with emphasis upon those of non-literate societies. Examination of basic premises and elements of these belief systems, normally excluded from discussions of the "Great Religions". Prerequisite: none. 300D recommended for undergraduates.
410G-3 Psychological Anthropology. Similarities and differences in personality structures cross-culturally including the historical development of this as an anthropological subdiscipline. Prerequisite: none. 300D recommended for undergraduates.
410H-3 Ethnomusicology of Oceania, Asia and Africa. A survey of theory, method, structure, organology, and cultural context of the ethnomusicology of Oceania, Asia and Africa.
410I-3 Ethnomusicology of Middle East, Europe and the New World. A survey of theory, method, structure, organology, and cultural context of the ethnomusicology of Europe and the New World.
410J-3 Kinship and Social Organization. Universal features of non-Western systems of kinship terminology and social organization. Topics include the structure and functioning of kinship systems, lineages, clans, sibs, phratries, moieties, and tribal units. Prerequisite: none. 300D recommended for undergraduates.
410K-3 Ecological Anthropology. An examination of the relationship of past and present human populations in the context of their natural and social environments. Prerequisite: 300c and 300d or equivalent.
425-3 Cognitive Anthropology. The theory of culture as cognitive organization is explored. Among the topics are: Formal analysis of lexical domains, folk classifications and strategies, the problem of psychological validity, linguistic determinism and relativity, biogenetic and psycholinguistic bases of cognition, and the "new ethnography."
430A-3 Archaeology of North America. Detailed study of the early cultures of North America. Emphasis on the evolutionary cultural development of North America. Prerequisite: 300C or 400C or consent of instructor.
430B-3 Archaeology of Meso-America. Detailed study of the early cultures of Meso-America with emphasis on the evolutionary cultural development of Meso-America. Prerequisite: 300C or 400C or consent of instructor.
430C-3 Archaeology of the Southwest. Detailed study of the early cultures of the Southwest with emphasis on the evolutionary cultural development of the area. Prerequisite: 300C or 400C or consent of instructor.
430D-3 Archaeology of the Old World. Detailed study of the early cultures of the Old World with emphasis on the evolutionary cultural development of the area. Prerequisite: 300C or 400C or consent of instructor.
440A-3 Human Evolution. An advanced consideration of the fossil evidence for human evolution and evaluation of the various theories regarding the course of human evolution. Prerequisite: 300A or consent of instructor.
440B-3 Race and Human Variation. A consideration of the range, meaning and significance of contemporary human biological variation, including evolutionary and adaptive implications and the utility of the race concept. Prerequisite: 300A or consent of instructor.
441-6 (3, 3) Laboratory Analysis in Archaeology. (a) Emphasizes methods of analysis in archaeology as part of a larger research design created by the student. May be taken independently or as a follow-up to 496. (b) Emphasizes technical methods of the physical and natural sciences in archaeological analysis, as used in environmental reconstruction, dating, and for the investigation of production and exchange.
444-3 Human Genetics and Demography. A course in human genetics with an emphasis on population genetics and demography of modern and ancient human populations. Prerequisite: 300A, 400A or consent of instructor.
450-6 (3, 3) Museum Studies. A detailed study of museum operation to include (a) methodology and display and (b) administration, curation, and visits to or field work with area museums. Practical museum work will be stressed in both (a) and (b) and (a) must be taken before (b).
455-3 to 15 (3 per topic) Topics in Physical Anthropology. Intensive study of one of the major subfields within physical anthropology. (a) Dental anthropology. (b) Laboratory methods. (c) Primate behavior and evolution. (d) Quantitative methods. (e) Epidemiology. Prerequisite: 300a or consent of instructor.
460-1 to 12 Individual Study in Anthropology. Guided research on anthropological prob-

lems. The academic work may be done on campus or in conjunction with approved off-campus (normally field research) activities.
470-3 to 24 People and Cultures. A survey of the prehistory, cultural history and contemporary cultures of the area in question. Topical emphasis may vary from course to course and year to year. **(a)** Africa, **(b)** Asia, **(c)** Caribbean, **(d)** Europe, **(e)** Latin America, **(f)** Near East and North Africa, **(g)** North America, **(h)** Oceania. Prerequisite: a basic acquaintance with geography and history of the areas.
480-3 Honors Seminar. Topics to be arranged by agreement of participating faculty and students. Not open to graduate students. Prerequisite: consent of department. Elective Pass/Fail.
490-3 Field Methods and Analysis in Linguistic Anthropology. Includes theoretical background and a project in the linguistic aspects of culture. Prerequisite: 300b, 301, or 400b.
495-6 to 8 Summer Ethnographic Field School. An eight-week field research training program in Southern Illinois communities. Students will attend seminars on campus and in the field, but the greater part of the time will be spent engaging in continuous team research under the direction of the faculty members involved in the program. Some form of cooperative living arrangement in the field will be organized. The program is open to advanced undergraduate and graduate students. Prerequisite: consent of instructor.
496-1 to 8 Field School in Archaeology. Apprentice training in the field in archaeological method and theory. Students will be expected to be in full-time residence at the field school headquarters off campus. Prerequisite: consent of instructor.
499-3 Honors Thesis. Directed reading and field or library research. The student will write a thesis paper based on original research. Not open to graduate students. Prerequisite: consent of department. Elective Pass/Fail.
501-6 (3, 3) Practicum in Educational Anthropology.
510-2 to 6 (2 to 3 per topic) Seminar in New World Archaeology.
511-2 to 6 (2 to 3 per topic) Seminar in Meso-American Archaeology.
512-2 to 6 (2 to 3 per topic) Seminar in Old World Archaeology.
513-2 to 6 (2 to 3 per topic) Seminar in Archaeology.
515A-3 Seminar in Social-Cultural Anthropology.
515B-3 Seminar in Social-Cultural Anthropology.
520-2 to 6 (2 to 3 per topic) Seminar in New World Ethnology.
521-2 to 6 (2 to 3 per topic) Seminar in Ethnology of Latin America.
522-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Oceania.
523-2 to 6 (2 to 3 per topic) Seminar in Anthropology of Africa.
530-2 to 6 (2 to 3 per topic) Seminar in Physical Anthropology.
540-3 Pidgin and Creole Languages.
545-2 to 6 (2 to 3 per topic) Seminar in Anthropological Linguistics.
560-2 to 6 (2 to 3 per topic) Seminar in Comparative Social Organization.
562-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Contemporary Peoples.
565-2 to 6 (2 to 3 per topic) Seminar in Culture Change and Development.
567-2 to 6 (2 to 3 per topic) Seminar in Anthropological Theory and Method.
576-2 to 6 (2 to 3 per topic) Seminar in Anthropological Research Design.
581-2 to 6 (2 to 3 per topic) Seminar in Anthropology.
585-1 to 12 (1 to 3 per semester) Readings in Anthropology.
590-1 to 12 Internship in Conservation Archaeology.
595-3 Field Methods in Ethnology.
597-1 to 12 Fieldwork in Anthropology.
599-1 to 6 Thesis.
600-1 to 32 (1 to 12 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Aquatics (Minor)

(SEE PHYSICAL EDUCATION)

Architectural Technology (Program, Major, Courses)

The continuing growth of the architectural profession requires large numbers of technicians whose training has provided a firm foundation for supporting roles in today's profession and the basis for skill development in emerging activities. The architectural technology program offers this training in a curriculum designed to produce the skills in highest demand in the market for newcomers to the profes-

sion. Appropriate general education and field trips to architects' offices and projects supplement the technical offerings.

Intelligent, motivated students with mathematical, artistic, or manual skills will be most successful in the program. Students are required to provide their own drafting equipment and normal supplies. A suggested list of equipment will be provided upon request at the time of registration. There will be a charge by semester for such items as special presentation materials, field trips, locker usage, etc. The charges will be for all those taking architectural courses and will total approximately $150 for the four required semesters.

Architects who hold professional degrees and have many years of professional and teaching experience constitute the faculty. The program has been approved by the American Institute of Architects.

An advisory committee whose members are practicing architects chosen for their understanding of today's needs in the profession and their interest in education assists the faculty in maintaining a current curriculum. Members currently serving on the advisory committee are: Edward F. Bartz, Jr., FAIA, Hellmuth-Obata and Kassabaum, Belleville, William E. Gramley, AIA, Phillips-Swager Associates, Peoria, Frederick W. Salogga, FAIA, Salogga-Bradley-Likins-Dillow, Decatur, and William H. Stein, AIA, Fischer-Stein Associates, Carbondale.

Graduates will have an understanding of the design profession, design and production processes, and other components of the construction industry. Their usual point of entry into the profession is as drafting technicians producing construction drawings. As they gain experience they may develop capabilities to accept more responsibility in such areas as project coordination, specification writing, estimating, various types of engineering, construction inspection, architectural design, and presentation.

There are also nonprofessional opportunities in the construction industry with manufacturers, material suppliers, contractors, and developers.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Architectural Technology

GE-D 101, 153	6
School of Technical Careers 102, 105a,b, 107a,b	10
Architectural Technology 111, 112, 113, 124, 125, 214, 215, 216, 217, 219, 220, 224, 225, 226, 229	60
Total	76

Courses

111-7.5 Architectural Drafting. Use of drafting instruments, lettering and linework; geometric construction, projections, sections and intersections; pictorial drawing, perspective, shades and shadows, and reflections. Lecture three hours. Laboratory nine hours. Prerequisite: major in architectural technology or consent of coordinator of architectural technology.

112-3.5 Architectural Graphics. Freehand drawing; various techniques in black and white media; theory and use of color; delineation techniques in various color media. Lecture one hour. Laboratory five hours. Prerequisite: major in architectural technology or consent of coordinator of architectural technology.

113-3 Architectural History. The study of the influences and development of the built environment from prehistoric to contemporary. In particular the study of structure, aesthetics, and language of architecture.

124-6 Architectural Drawings I. Introduction to basic materials and components used in contemporary construction. A survey of manufacturing methods, available sizes, performance characteristics, quality, finishes and applications. Usage of vendor's brochures and standard references. Preparation of working drawings in light wood frame construction to practice current procedures, dimensioning, notation, design, correlation, with standard

and creative detailing. Lecture three hours. Laboratory six hours. Prerequisite: 111 and major in architectural technology or consent of coordinator of architectural technology.

125-4 Architectural Design I. Problem solving in architectural design with emphasis on design elements and principles, human scale, methods and procedures, composition, and presentation. Architectural projects of relatively small scope and simple nature; and introducing factors of circulation and environmental control. Lecture one hour. Laboratory five hours. Prerequisite: 111, 112, and 113 and major in architectural technology or consent of coordinator of architectural technology.

214-6 Architectural Drawings II. Continuing study of materials and practices in document preparation for non-complex buildings using masonry and reinforced concrete construction. Investigation and use of local, state, and federal codes regulating health and safety. Construction techniques relating to criteria of permanence, low maintenance and budget requirements. Working drawings for single floor, non-residential buildings. Lecture three hours. Laboratory six hours. Prerequisite: 124 and major in architectural technology or consent of coordinator of architectural technology.

215-4 Architectural Design II. Continuing study of architectural design with application of principles to projects of increased scope and complexity, with attention to research, site planning, and comprehensive feasibility. Presentations in various media. Lecture one hour. Laboratory five hours. Prerequisite: 125 and major in architectural technology or consent of coordinator of architectural technology.

216-4 Architectural Engineering I. Elementary study of forces and force systems using graphical and mathematical solutions. Basic engineering concepts. Reactions, shear and moment diagrams. Axial, bending, and eccentric loading on beams and columns. Application of principles in design with wood, steel, and concrete. Floor and roof support systems using dead and live load calculations. Lecture four hours. Prerequisite: School of Technical Careers 105a,b, 107a,b and major in architectural technology or consent of coordinator of architectural technology.

217-2 Architectural Systems. Basic principles of mechanical and electrical equipment of buildings. Familiarization with water supply and sanitation systems. Fundamentals of properties of heat, sources, transmission, air conditioning, and purification systems. Introduction to vertical and horizontal transportation. Fundamentals of illumination and electrical systems. Fundamentals of acoustics and materials for reflection, attenuation and isolation. Lecture two hours. Prerequisite: School of Technical Careers 105a, b, 107a, b, and major in architectural technology or consent of coordinator of architectural technology.

219-2 Site Work and Planning. Fundamentals of typography, site planning, building location, preparation of detailed site drawing, introduction to use of surveying equipment. Lecture two hours. Prerequisite: 124 and major in architectural technology or consent of coordinator of architectural technology.

220-2 Architectural Specifications. Function of specifications as a contract document. The relationship of specifications to architectural drawings. Organization and format. Content of various sections. Lecture two hours. Prerequisite: concurrent with 224 and major in architectural technology or consent of coordinator of architectural technology.

224-6 Architectural Drawings III. Continuing study of materials and practice in document presentation for construction of multi-floor buildings of a more complex nature. Contemporary materials, components and systems. Steel and concrete framing systems using short and longspan steel joists, steel pans, pre- and post-tensioned precast components. Correlation with electrical, mechanical, and structural work. Lecture three hours. Laboratory six hours. Prerequisite: 214, 219, and major in architectural technology or consent of coordinator of architectural technology.

225-4 Architectural Design III. Continuing application of architectural design principles and procedures to projects of higher factor of usage, or greater scope and complexity of function and circulation. Continuing practice in presentation with various media. Lecture one hour. Laboratory five hours. Prerequisite: 215 and major in architectural technology or consent of coordinator of architectural technology.

226-4 Architectural Engineering II. Continuing study of structural framing materials and systems. Design and investigation of framing components of wood, steel, and concrete. Usage of wood, steel, and concrete handbooks. Standard connections and fastening methods. Concrete design, quality control, and field inspection. Beams, columns, lintels, foundations, footings, and retaining walls. Lecture four hours. Prerequisite: 216 and major in architectural technology or consent of coordinator of architectural technology.

229-2 Architectural Estimating. Estimating methods. Material lists and quantities. Material and labor costs. Factors affecting costs. Lecture two hours. Prerequisite: School of Technical Careers 105a,b; Architectural Technology 214 and major in architectural technology or consent of coordinator of architectural technology.

316-3 Architectural Engineering III. Continuing study of framing materials and systems for buildings using advanced concepts of structural analysis. Included are earthquake resistant structures, composite beams, plastic theory, statically indeterminate structures, long spans, moment distribution, multi-story structures, etc. Prerequisite: 226

354-8 Architectural Project Development. Correlation of the design, design development and construction drawing phases of a building project. Development of a project from the initial program through the three phases with appropriate drawings required for each phase. Prerequisite: 224, 225, and School of Technical Careers baccalaureate major or consent of coordinator of architectural technology.

Army Military Science (Department, Courses)

Army military science studies is a voluntary course sequence which leads to a commission as an officer in the United States Army (active army, army reserves, or army national guard). The basic course, consisting of six 100 and 200 level courses, is open to all students and carries no military obligation. Students may take one or all the basic courses offered, receiving credit hours for each course, without incurring a commitment to futher study in army military science or any branch of the armed forces. If a student continues into the advanced course, the student will then incur a military obligation. The obligation may be served in the active army, army reserves, or army national guard after the student is commissioned an officer, upon completion of the army military science program. Students who wish to complete the program must also complete a bachelor's degree, although the field of study is unrestricted.

Veterans of any service, students who are currently members of the armed forces (reserve or national guard), and students who have successfully completed four years of Junior Reserve Officer Training Corps instruction, may be eligible to enroll directly into the advanced course, regardless of their academic school year. Students who have no prior military service may attend a six week basic camp at Fort Knox, Kentucky, which will qualify them for entrance into the advanced course of army military science. The six weeks camp incurs no obligation on the part of the student.

All students enrolled in the advance course must attend a six week advance camp at Fort Riley, Kansas, between the first and second years of the advance course (normally the summer between the junior and senior school year). Both the basic and advance camp pay the student for travel and attendance at camp, plus provide free room, board, and uniforms.

Financial assistance is available in the form of Illinois State ROTC scholarships, national ROTC scholarships, and a tax free $100 per month (for ten months) subsistence pay for all students in the advance course.

Courses

101-1 U.S. Defense Establishment. An examination of the realities of conflict and the U.S. institutional response to conflict. Includes the history, organization, and mission of the U.S. defense establishment and explores the implications of an individual's decision to exercise leadership within the context of the defense establishment.

102-1 or 2 Land Navigation and Traverse. An introduction to land navigation involving the use of the compass, topographic maps, the sun, and prominent stars. Includes terrain traverse techniques such as simple free climbing and rappelling. Competitive compass exercises will also be presented, as well as other outdoor practical exercise.

103-2 Rifle Marksmanship and Safety. An introduction to the training and firing techniques for small bore rifle and pistol match competition, rifle range safety, and safety precautions in the use and handling of firearms and handguns. Mandatory Pass/Fail.

201-3 Small Group Dynamics and Leadership. Applied leadership in a small group context. Exercises in self confidence, group communications, and leadership evolved from situations where the group is required to function and survive on a self-sufficient basis. Principles of survival and cooperative effort will be explored in depth, with maximum involvement of the student in leadership and problemsolving roles.

202-2 The Military Management System. A study of the military management system including the functional aspect of leadership within the military structure. Includes the presentation of military leadership traits, style, and approaches; managerial techniques, and communications.

258-1 to 8 Leadership Equivalency. Eight hours work experience credit for 101, 102, 201,

202, or six hours of work experience credit for Basic Camp. This credit will be evaluated by the professor of military science. Prerequisite: satisfactory completion of the academic phase of the six-week field training programs.

301-3 or 4 A Study of Organizational Leadership. A multi-faceted approach to the study of leadership in both a military and civilian setting. Emphasis is placed upon human behavior, communication, the individual as a leader, group dynamics, and the military's interface with society. An extensive block on the branches of the army is also presented. Includes leadership laboratory. Prerequisite: credit for eight hours of 100 and 200 level courses or 258. Non-army ROTC students may elect Pass/Fail.

302-3 Small Unit Tactics. The student is introduced to small unit tactical operations at the platoon and company level. Offensive, defensive, and retrograde operations are covered in detail. Unit organization and patrolling are also stressed. Practical exercises are conducted in the classroom and in field environments. Prerequisite: credit for six hours of 100 and 200 level courses or 258. Non-army ROTC students may elect Pass/Fail.

358-6 Advanced Leadership Camp. A special six-week field study training program designed to further prepare Army ROTC advanced course students for the basic tasks that will be required of them as junior officers and leaders in the Army. The course is normally conducted at Fort Riley, Kansas, during the summer. Prerequisite: consent of the professor of military science.

401-3 or 4 Advanced Leadership and Management. An analysis of selected leadership and management problems in the following military subjects: unit administration at company level emphasizing correspondence; fundamental concepts of military justice in the armed forces of the United States, including the procedures by which judicial and nonjudicial disciplinary measures are conducted; U.S. Army readiness program as it deals with unit maintenance; the position of the United States in the contemporary world scene discussed in the light of its impact on leadership and management problems of the military service; and a fundamental knowledge of the logistical support available to the unit. Leadership development is continued by the application of leadership principles, stressing responsibilities of the leader, and increasing experience through practical exercises. Includes leadership laboratory. Not for graduate credit. Non-army ROTC students may elect Pass/Fail.

402-3 Fundamentals and Dynamics of the Military Team. This course is designed to give the students a working knowledge in the theory and dynamics of the military team. Generally this includes a study of combat operations by the various military teams, with emphasis on the planning and coordination necessary between the elements of the team. The subjects to be presented during this three-hour block of instruction include an understanding of command and staff organization at the battalion level, military intelligence methods and procedures used to obtain the intelligence, and an analysis of the principles used in internal defense and development, emphasizing tactical operations which include civil affairs. Since this course is presented just prior to the commissioning of the cadets, several hours of instruction are presented near the end of the school year on the obligations and responsibilities of an army officer. Leadership laboratory one hour per week. Not for graduate credit. Non-army ROTC students may elect Pass/Fail.

403-1 to 3 Independent Study in Military Science. Directed independent study in selected areas. Students may register for one hour per semester or may register for one hour for the first semester and two hours for the second. They may not register for three hours during one semester. Not for graduate credit. Prerequisite: consent of the professor of army military science.

Art (School, Majors [Art and Design], Courses)

The major objectives of the School of Art at Southern Illinois University at Carbondale are (1) to provide programs of quality and professional education in art; (2) to provide quality education in general education; and (3) to contribute to the aesthetic, scholarly, and cultural life of the disciplines in the arts and to society in general. Students at all levels of study are expected to strive for the high degree of excellence that is consistent with the ideals and philosophy of the School of Art.

Undergraduate offerings in the School of Art provide both introductory and specialized experiences. The school offers two majors: art and design. The major in art, with specializations in drawing, painting, printmaking, sculpture, ceramics, metalsmithing, and fibers/weaving, leads to the Bachelor of Fine arts degree and the specializations in art education, art history and general studio lead to the Bachelor of Arts degree. The major in design, with specializations in

visual communications and product design, leads to the Bachelor of Arts degree.

ART MAJOR

Bachelor of Fine Arts Degree, College of Communications and Fine Arts

A student majoring in art should select one of the following fields of interest by the end of the sophomore year: drawing, painting, printmaking, sculpture, ceramics, metalsmithing, or fibers/weaving.

ART MAJOR – DRAWING SPECIALIZATION

General Education Requirements	45
Art 100a and 207 must be taken as approved substitutes in GE-C	
Requirements for Major in Art with Specialization in Drawing	(6) + 69
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 300a, 346	(6) + 27
Art 204, 205, or 206	3
Art history electives	6
Art 202, 300b, 300c, 301a, 301b, 302a, or 302b, or 302c, 400a, 400b, 400c	33
Electives	6
Total	120

ART MAJOR – PAINTING SPECIALIZATION

General Education Requirements	45
Art 100a and 207 must be taken as approved substitutes in GE-C	
Requirements for Major in Art with Specialization in Painting	(6) + 69
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 300a, 346	(6) + 27
Art 204, 205, or 206	3
Art history electives	6
Art 202, 300b, 301a, 301b, 301c, 302a or 302b or 302c, 401a, 401b, 401c	33
Electives	6
Total	120

ART MAJOR – PRINTMAKING SPECIALIZATION

General Education Requirements	45
Art 100a and 207 must be taken as approved substitutes in GE-C	
Requirements for Major in Art with Specialization in Printmaking	(6) + 72
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 300a, 346	(6) + 27
Art 204, 205, or 206	3
Art history electives	6
Art 202, 300b, 300c, 301a, 302a, 302b, 302c, 402a, 402b, 402c	36
Electives	3
Total	120

ART MAJOR – SCULPTURE SPECIALIZATION

General Education Requirements	45
Art 100a and 207 must be taken as approved substitutes in GE-C	
Requirements for Major in Art with Specialization in Sculpture	(6) + 66
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 346, and 300a, 300b, or 300c	(6) + 27
Art 204, 205, or 206	3
Art history electives	6
Art 303, 403a, 403b, 403c	24
Electives from craft area	6
Electives	9
Total	120

ART MAJOR – CERAMICS SPECIALIZATION

General Education Requirements 45
Art 100a and 207 must be taken as approved substitutes in GE-C
Requirements for Major in Art with Specialization in Ceramics ..... (6) + 69
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 346, and 300a, 300b or 300c ..... (6) + 27
Art 205 or 206 3
Art history electives 6
Art 204, 303a, 304a, 304b, 404a, 404b, 404c, 404d-6 30
Electives from crafts area 3
Electives 6
Total 120

ART MAJOR – METALSMITHING SPECIALIZATION

General Education Requirements 45
Art 100a and 207 must be taken as approved substitutes in GE-C
Requirements for Major in Art with Specialization in Metalsmithing ..... (6) + 69
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 346, and 300a, 300b or 300c ..... (6) + 27
Art 204 or 206 3
Art history electives 6
Art 205, 303a, 305a, 305b, 405a, 405b, 405c, 405d-6 30
Electives from crafts area 3
Electives 6
Total 120

ART MAJOR – FIBERS/WEAVING SPECIALIZATION

General Education Requirements 45
Art 100a and 207 must be taken as approved substitutes in GE-C
Requirements for Major in Art with Specialization in Fibers/Weaving ..... (6) + 73
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 346, and 300a, 300b or 300c ..... (6) + 27
Art 204 or 205 3
Art history electives 6
Art 202, 206, 306a, 306b, 406a, 406b, 406c, 406d-6 30
Electives from crafts area 3
Cinema and Photography 315 4
Electives 2
Total 120

Bachelor of Arts Degree, College of Communications and Fine Arts

A student major in art with a specialization in art history, art education, or general studio should select the specialization by the end of the sophomore year.

ART MAJOR – ART HISTORY SPECIALIZATION

General Education Requirements 49
Art 100a and 207 must be taken as approved substitutes in GE-C. 8 hours of foreign language (French or German) are required, four of which will not count toward General Education Requirements and 2 hours of GE-C 207.
Requirements for Major in Art with Specialization in Art History ..... (6) + 60

Art 100a, 100b, 107, 110, 120, 201, 203, 207, and 204, 205, or 206	(6) + 21
Art 217, 346, and 27 hours selected from 307, 317, 329 349, 439, 449a, 449b, 447, 457, 467, 477, 487	33
Art electives	6
Electives	11
To be chosen from philosophy, history, anthropology, classical studies, foreign languages, religious studies, or other courses approved by the School of Art	
Total	120

ART MAJOR — GENERAL STUDIO SPECIALIZATION

General Education Requirements	45
Art 100a and 207 must be taken as approved substitutes in GE-C	
Requirements for Major in Art with Specialization in General Studio	(6) + 60
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 346, and 300a, 300b, 300c	(6) + 27
Art 204, 205, or 206	3
Art history electives	3
Art electives	21
Six hours selected from Commercial Graphics, Cinema and Photography, and Design	6
Electives	15
Total	120

Bachelor of Arts Degree, College of Communications and Fine Arts or Bachelor of Science Degree, College of Education

ART MAJOR — ART EDUCATION SPECIALIZATION

General Education Requirements	45
Art 100a and 207 must be taken as approved substitutes in GE-C, GE-B 212 or 301 and GE-B 202, GE-C literature, GE-E 201 and two hours of physical education courses.	
Requirements for Major in Art with Specialization in Art Education	(6) + 50
Art 100a, 100b, 107, 110, 120, 200, 201, 203, 207, 346	(6) + 24
Art 204, 205, and either 202 or 206	9
Art history electives	3
Art electives	4
Art 308, 318, 328a, 338a, 328b or 338b	10
Professional Education Requirements	25
See Teacher Education Program, page 66.	
Total	120

Minor

A total of 21 hours is required for the minor. The student must complete 100a, 100b, 107, and 207 for 12 hours and may then elect studio or art history courses for the remaining nine hours.

DESIGN MAJOR

Bachelor of Arts Degree, College of Communications and Fine Arts

A student majoring in design should select one of the following specializations by the end of the sophomore year.

DESIGN MAJOR — PRODUCT DESIGN SPECIALIZATION

General Education Requirements	45
Art 100a and 207 must be taken as approved substitutes in GE-C	
Requirements for Major in Design with Specialization in Product Design	(6) + 66
Art 100a, 100b, 107, 110, 207, 346	(6) + 12
Art 203, 204, 205, or 206	6
Design 102, 201, 202, 252, 312, 362, 406, 412, 413, 462, 494	36
Computer Science 102	3
School of Technical Careers 215a	3
Engineering 100	3
Marketing 304, 305 or 350	3
Approved Electives	9
Total	120

DESIGN MAJOR — VISUAL COMMUNICATION SPECIALIZATION

General Education Requirements	45
Art 100a and 207 must be taken as approved substitutes in GE-C	
Requirements for Major in Design with Specialization in Visual Communication	(6) + 71
Art 100a, 100b, 107, 110, 120, 207, 302b, 346	(6) + 18
Design 102, 201, 254, 300, 304, 322, 372, 373, 405, 406, 422, 472	38
Art and design history electives	3
School of Technical Careers 215a	3
Marketing 304	3
Computer Science 202	3
Marketing 305, 363 or Computer Science 204	3
Electives	4
Total	120

DESIGN MAJOR — COUNTRYTOWN SPECIALIZATION

Admissions to the countrytown specialization are suspended. Incoming students are encouraged to consider the product design or visual communication specializations.

Courses in Art

Art Education Courses:	308, 318, 328a, 328b, 338a, 338b, 348, 408, 508, 518
Art History Courses:	107, 207, 217, 307, 317, 329, 346, 349, 419, 439, 447, 449a, 449b, 457, 467, 477, 487, 507, 517
Studio Courses:	100a, 100b, 110, 120, 200, 201, 202, 203, 204, 205, 206, 300, 301, 302, 303, 304, 305, 306, 319, 400, 401, 402, 403, 404, 405, 406, 414, 500, 501, 502, 503, 504, 505, 506, 514
Independent Study Courses:	219, 257, 258, 259, 309, 499, 599, 601

100A-3 Two-Dimensional Design. A fundamental design class dealing with two-dimensional concepts and materials. Emphasis will be placed on design problems which will develop perceptual skills and critical judgment. Studio fee $3. Incidental expenses not to exceed $50.
100B-3 Three Dimensional Design. A fundamental design class dealing with three-dimensional concepts and materials. Emphasis will be placed on design problems which will develop perceptual skills and critical judgment. Studio fee $10. Incidental expenses not to exceed $30.
107-3 Fundamentals of Art. A study of the language of visual art and its use to communicate through visual media. Critical thinking is developed through visual awareness and the understanding of the universality of visual concepts.

110-3 Introduction to Drawing I. Designed to help the student experience the concepts and processes that constitute the language of graphic expression. The goal is a working understanding of the still life. Studio fee $3. Incidental expenses not to exceed $25.
120-3 Introduction to Drawing II. Designed to help the student experience the concepts and processes that constitute the language of graphic expression. The goal is a working understanding of inanimate and animate form in space. Studio fee $3. Incidental expenses not to exceed $25.
200-3 Introduction to Drawing III. Concerned with the introduction to various media, compositional devices, spatial investigation, and the human figure. Studio fee $22. Incidental expenses not to exceed $25. Prerequisite: 120.
201-3 Introduction to Painting. Emphasizing material, techniques, processes, and ideas fundamental to the discipline of painting. Studio fee $3. Incidental expenses not to exceed $50. Prerequisite: 100a, b, 107, 110, 120, 207.
202-3 Introduction to Printmaking. Lectures and films on the basic printmaking processes: relief, intaglio, plano graphic, stencil, and cast paper. Emphasis on studio lab work in relief and intaglio printmaking processes. Studio fee $30. Incidental expenses not to exceed $35. Prerequisite for art majors: 100a, b, 107, 110, 120, 207.
203-3 Beginning Sculpture. Emphasis experience in materials, techniques, processes, and ideas fundamental to the discipline of sculpture. Studio fee $25. Incidental expenses not to exceed $25. Prerequisite: 100a, b, 107.
204-3 Beginning Ceramics. Introduction to ceramic forming techniques of hand building and throwing on the potter's wheel. Students will explore traditional methods of ceramic form construction and will develop fundamental building skills through dialogue, projects, and problem-solving experiences. Studio fee $33 to $66. Incidental expenses not to exceed $15. Prerequisite: 100a, b, 107.
205-3 Beginning Jewelry and Metalsmithing. An introduction to the fundamental skills and technology of jewelry and metalsmithing through practical experience. The properties of the medium will be explored and a survey of the field will be made. Studio fee $24. Incidental expenses not to exceed $10. Prerequisite: 100a, b, 107.
206-3 Beginning Fibers. A studio course providing experience in the materials, techniques, processes, and ideas in basic dyed, printed, stitched, and non-loom fibers. Emphasis will be on the expressive use of the two- and three-dimensional qualities of fiber. Studio fee $50. Incidental expenses not to exceed $50. Prerequisite: 100a, b, 107.
207-3 Survey of Art History. A selected survey of world art beginning with prehistoric and culminating with contemporary art trends. Special attention will be given to traditional art forms such as painting, sculpture, and architecture, and additional media such as ceramics, metals, and fibers will be discussed.
217-3 Methodology of Art History. Lecture, discussion, and presentation of the research tools of art history, art historical logic and the methods of art criticism.
219-2 to 18 Workshop. Workshop experience in specific studio and academic disciplines: **(a)** drawing, **(b)** painting, **(c)** watercolor, **(d)** printmaking, **(e)** sculpture, **(f)** ceramics, **(g)** glass, **(h)** fibers, **(i)** metals, **(j)** art education, **(k)** art history. Studio fee $3 to $50, depending on course discipline.
257-1 to 30 Work Experience. Credit for concurrent or non-structured work performed which is related to the student's educational objective. Credit to be granted by department evaluation. Mandatory Pass/Fail.
258-1 to 30 Work Experience. Credit for past work performed which is related to the student's educational objective. Credit to be granted by departmental evaluation. No grade for past work experience.
259-2 to 15 Transfer Credit. Credit to be given for course work granted by any accredited educational institution or vocational institution. Prerequisite: any work accepted for transfer credit in art must be granted with the approval of the appropriate faculty.
300-9 (3, 3, 3) Intermediate Drawing. (a) Beginning figure drawing, **(b)** intermediate figure drawing, **(c)** advanced figure drawing. Studio fee $30 to $60. Incidental expenses not to exceed $25 for each section. Must be taken in a, b, c sequence. Prerequisite: 200.
301-9 (3, 3, 3) Intermediate Painting. (a) Oil painting emphasizing the figure **(b)** aqueous medium emphasized, **(c)** beginning individual problem solving. Studio fee: for a, $30 to $60; for b and c, $3 to $6. Incidental expenses not to exceed $50 for each section. Prerequisite: 201; a and b must be taken before c.
302A-3 Beginning Etching. Introduction to the basic processes of intaglio printmaking, including etching, aquatint, engraving, and drypoint. Emphasis will be on black and white printing. Studio fee $40. Incidental expenses not to exceed $50. Prerequisite: 202 for students specializing in printmaking only.
302B-3 Beginning Lithography. Introduction to the history and basic processes of lithography, including use of stone and plate. Emphasis will be on black and white printing. Studio fee $40. Incidental expenses not to exceed $45. Prerequisite: 202 for students specializing in printmaking only.
302C-3 Beginning Silkscreen. Introduction to the basic processes and history of silk-

screen; including construction of screen and hand and photographic stencil-making techniques. Studio fee $40. Incidental expenses not to exceed $45. Prerequisite: 202 for students specializing in printmaking only.

303-9 (3, 3, 3) Intermediate Sculpture. A studio orientation to tools, techniques, materials, and problems involved in historical and contemporary sculpture. Metal fabrication, figure, wood and stone carving, and plaster fabrication will be emphasized. Studio fee $8 per credit hour enrolled. Incidental expenses not to exceed $50. Prerequisite: 203.

304-6 (3, 3) Intermediate Ceramics. **(a)** Focuses on structured problems designed to encourage the student to apply basic forming skills experienced at the introductory level. Pottery shapes requiring singular and multiple form components will be investigated and simple glazing techniques will be introduced. **(b)** Stresses studio problems of a group nature and introduces glaze calculation as both theory and a practical tool. Personal and creative interpretation of assignments; some problems requiring group effort. Must be taken in a, b sequence. Studio fee $50 to $100. Incidental expenses not to exceed $10 for each section. Prerequisite: 204.

305-6 (3, 3) Intermediate Metalsmithing. **(a)** Exploration of various processes emphasizing the diversity of the technical possibilities within the discipline of metalsmithing. **(b)** Emphasis placed on the use of these processes to develop individual styles. Studio fee $24. Incidental expenses not to exceed $25 for each section. Prerequisite: 205.

306-6 (3, 3) Intermediate Fibers. **(a)** Introduction to weaving; simple and floor looms; work in spinning, dyeing, stitching, printing, and non-loom fibers is encouraged. **(b)** Continued work in weaving and dyeing with emphasis on double weave, sculptural fibers, and warp and weft ikat. Emphasis on personal expression, craftsmanship, and imagery. Studio fee $50. Prerequisite: 206.

307-3 Ancient Art. A survey of ancient art concentrating on Egyptian, Mesopotamian, Aegean, Greek, Etruscan, and Roman art. Special attention will be given to traditional art forms such as architecture, sculpture, and pottery. Additional art forms will be investigated as they are germane to a particular culture.

308-3 Theories and Philosophies of Art Education. Students develop an understanding of the major issues in art education through examining theories and philosophies of art education. Areas of focus include trends in art education, child development in art, perceptual and psychological development, learning theory, and teaching methods. Requirements include extensive reading and preparation of a major paper. Printing/duplicating fee $3.

309-3 to 12 Independent Study. To be used by majors in the School of Art to pursue independent research activities. Prerequisite: completion of all foundation courses, 3.0 grade point average, major in the School of Art, and consent of instructor.

317-3 Medieval Art. A survey of medieval art from ca. 250 A.D. to 1400 A.D. Early Christian, Byzantine, Celtic, Carolingian, Attowian, Romanesque, and Gothic architecture, sculpture, and painting will be given, as well as representative examples of the minor arts where germane to a particular culture.

318-2 Curriculum Development in Art Education. Prepares students to organize art resources, materials, and concepts into effective art learning experiences. The focus is on integrating art concepts from art history, aesthetics, criticism, etc., with studio methods and techniques. Requirements include extensive reading, the preparation of a position paper on teaching art, and developing a curriculum document. Printing/duplicating fee $3.

319-3 Art Studio for Non-Majors. General studio for the non-art major. Incidental expenses will be at least $10 per semester.

328A-2 Art Education Methods: Elementary. Lecture and studio. Prepares students to teach children the fundamentals of art production. Areas of focus include teaching strategies and methods, art processes and techniques, and the appropriate use of tools and materials. Studio fee $10. Incidental expenses not to exceed $15.

328B-1 Internship Laboratory. Observation and pre-teaching experiences in educational settings.

329-3 19th Century Art. Survey of painting, sculpture, and architecture in Europe from the French Revolution to the end of the century. Includes such major stylistic movements as Neoclassicism, Romanticism, Realism, Impressionism, Post-Impressionism, and the roots of modern art.

338A-2 Art Education Methods: Secondary Lecture and studio. Prepares students to teach adolescents the fundamentals of art production. Areas of focus include teaching strategies and methods, art processes and techniques, and the appropriate use of tools and materials. Studio fee $10. Incidental expenses not to exceed $15.

338B-1 Internship Laboratory. Observation and pre-teaching experiences in educational settings.

346-3 Survey of 20th Century Art. A survey of the major developments in painting, sculpture, architecture, and other selected areas of the visual arts from the beginning of the 20th century to the present. These developments are examined in relation to the other significant cultural, scientific, and philosophical events of the 20th century.

348-3 Art Education for Teachers. Lecture and studio for non-art majors. Especially

applicable to pre-school and K-6 grades. Introduction to uses and applications of art media, approaches to teaching artistic awareness, concept development, creative expression, appreciation, art judgment, and knowledge of our art heritage. Studio fee $10. Incidental expenses not to exceed $15.

349-3 Esthetics. General survey of historical and contemporary philosophies of the beautiful with particular emphasis upon their relation to visual works of art and individual student research leading to the organization and presentation of a personal esthetic concept.

400-3 to 30 (6, 6, 3, 3 to 15) Advanced Drawing I. **(a)** Figure drawing. Not for graduate credit. Prerequisite: 300a, b, c. **(b)** Individual research. Not for graduate credit. Prerequisite: 400a. **(c)** Senior seminar and exhibition. Not for graduation credit. Prerequisite: 400b. **(d)** Independent study in drawing. Prerequisite: for undergraduates, 400b; for graduates, consent of major adviser. Studio fee: for a and b, $54 to $108; for d, $3 to $6. Incidental expenses may exceed $50 for each section.

401-3 to 30 (6, 6, 3, 3 to 15) Advanced Painting I. **(a)** and **(b)** Individual problem solving with emphasis on technical and conceptual synthesis. Not for graduate credit. Prerequisite: for a, 301a, b, c; for b, 401a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: 401b. **(d)** Independent study in painting. Prerequisite: for undergraduates, 401b; for graduates, consent of major adviser. Studio fee for a, b. and d, $3. Incidental expenses may exceed $50 for each section.

402-3 to 30 (6, 6, 3, 3 to 15) Advanced Printmaking I. **(a)** Advanced techniques in printmaking to include intense work in color printing. Not for graduate credit. Prerequisite: 302, 6 hours. **(b)** Individual research with emphasis on history, processes, and ideas which lead to the formation of personal content. Not for graduate credit. Prerequisite: 402a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: 402b. **(d)** Independent study in printmaking. Prerequisite: for undergraduates, 402b; for graduates, consent of major adviser. Studio fee: for a, b, and d, $10 per credit hour enrolled. Incidental expenses may exceed $50 for each section.

403-3 to 30 (6, 6, 3, 3 to 15) Advanced Sculpture I. **(a)** Foundry techniques and direct metal fabrication. Not for graduate credit. Prerequisite: 303a, b. **(b)** Individual research with emphasis on history, materials, processes and ideas that form personal content. Not for graduate credit. Prerequisite: 403a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: 403b. **(d)** Independent study in sculpture. Prerequisite: for undergraduates, 403b; for graduates, consent of major adviser. Studio fee: for a and b, $6 per credit hour enrolled. Incidental expenses may exceed $75 for each section.

404-3 to 27 (3, 6, 3, 3 to 15) Advanced Ceramics I. **(a)** Assigned individual problems with emphasis on ceramic form and glazing. Not for graduate credit. Prerequisite: 304, 6 hours. **(b)** Individual research with emphasis on kiln theory and design. Not for graduate credit. Prerequisite: 404a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: 404b. **(d)** Independent study in ceramics. Prerequisite: for undergraduates, 404b; for graduates, consent of major adviser. Studio fee: for a, b, and d, $24 to $48 per credit hour enrolled. Incidental expenses may exceed $20 for each section.

405-3 to 27 (3, 6, 3, 3 to 15) Advanced Metalsmithing. **(a)** Emphasis will be placed on advanced processes to develop individual expression. Not for graduate credit. Prerequisite: 305a, b. **(b)** Media exploration to develop individual styles. Not for graduate credit. Prerequisite: 405a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: 405b. **(d)** Independent study in metalsmithing. Prerequisite: for undergraduates, 405b; for graduates, consent of major adviser. Studio fee: for a, b, and d, $8 per credit hour enrolled. Incidental expenses may exceed $75 for each section.

406-3 to 27 (3, 6, 3, 3 to 15) Advanced Fibers I. **(a)** Individual design problems. Not for graduate credit. Prerequisite: 306b. **(b)** Individual research with emphasis on the intensive use of fibers as a creative medium. Not for graduate credit. Prerequisite: 406a. **(c)** Senior seminar and exhibition. Not for graduate credit. Prerequisite: 406b. **(d)** Independent study in fibers. Prerequisite: for undergraduates, 406b; for graduates, consent of major adviser. Studio fee for a and b, $17 per credit hour enrolled; for d, $15 to $30 per semester. Incidental expenses may exceed $75 for each section.

408-2 to 9 (2 to 3, 2 to 3, 2 to 3) Basic Research in Art Education. Each student demonstrates via class presentation, term papers and answers to exam questions, a knowledge of basic research techniques and applications; important literature in the field of art education; broad research meanings; a theory of art education and material on behavioral objectives presented in class and via tape-slide self instruction programs.

414-3 to 21 Glass I. A studio course designed for the beginning glass student focusing initially upon basic "flat glass" and cole working techniques and processes. Coursework includes projects intended to familiarize the student with designing and executing products in stained glass. Student will be introducted to forming techniques in glassblowing. Studio fee $12 per credit hour enrolled. Prerequisite: consent of instructor.

419-3 17th and 18th Century Art. A survey of art in Europe from ca. 1550 to 1880. Architecture, sculpture, and painting will be presented as well as representative examples of the minor arts where germane to a particular style or area.

439-3 American Art to World War II. A selected study of American art from the Colonial period to 1945. Native American and Hispanic cultures will be touched upon. Attention will be given to traditional art forms such as architecture, sculpture, and painting; however, the rich and varied folk art traditions of America will also be explained.
447-3 Introduction to Museology. A survey of museum and gallery techniques (emphasis upon practical exhibit development) which will involve answering questions concerning contractual agreements, taxes, insurance, packing, shipping, exhibit design and installation, record systems, general handling, public relations, and sale of art works directed toward problems encountered by the artist outside the privacy of the studio. Prerequisite: art major or consent of instructor.
449A-3 Art of the Northern Renaissance. A survey in art in northern Europe from 1300 to 1600. Architecture, sculpture, and painting will be presented as well as representative examples of the minor arts.
449B-3 Art of the Italian Renaissance. A survey of art in Italy from 1250 to 1550. Architecture, sculpture, and painting will be presented as well as representative examples of the minor arts.
457-3 Women in the Visual Arts. (Crosslisted as Women's Studies 427.) Consists of a survey of women's contributions and participation in the visual arts from the middle ages through the Twentieth century. Through lecture, discussion and research, painting, sculpture, architecture, crafts, film, photography, and other forms of visual art will be covered. Screening fee $10.
467-3 Critical Issues in Contemporary Art. An examination of the style and meaning of contemporary art in relation to the current political, social and cultural issues. Will include visual arts, architecture, and communications media.
477-3 American Art of the Thirties. A socio-political and artistic study of American art during the decade of the Great Depression. Course material will be divided in three parts: (1) a survey of art trends during the Thirties concentrating on traditional art forms such as painting, sculpture and architecture, (2) an investigation into government-subsized art programs, and (3) recent governmental and corporate patronage of the arts through such programs as the National Endowment.
487-3 Special Studies in Italian Renaissance Mural Painting. A study of Italian mural painting from 1250 to 1500. Special emphasis will be placed on the production, historical background, iconography, and patronage of the major narrative cycles of this period.
499-3 to 21 Individual Problems. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes, and ideas that form the content and experience of the student's major field. Designed to adapt to students' individual needs in problem research. Prerequisite: senior standing in the School of Art, a 3.0 average, and consent of instructor.
500-3 to 21 Advanced Drawing II.
501-3 to 21 Advanced Painting II.
502-3 to 21 Advanced Printmaking II.
503-3 to 21 Advanced Sculpture II.
504-3 to 21 Advanced Ceramics II.
505-3 to 21 Advanced Metalsmithing II.
506-3 to 21 Advanced Fibers II.
507-3 to 6 (3, 3) Readings in Art History.
508-2 to 9 (2 to 3, 2 to 3, 2 to 3) Research in Art Education.
514-3 to 21 Glass II.
517-3 to 6 (3, 3) Concepts in Art History.
518-2 to 9 (2 to 3, 2 to 3, 2 to 3) Seminar in Art Education.
599-2 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Courses in Design

Product Design courses:	102, 103, 201, 202, 252, 312, 313, 362, 406, 412, 413, 462, 463, 464, 465, 494.
Visual Communication courses:	102, 254, 300, 304, 322, 342, 372, 373, 405, 406, 422, 472.

Students will be expected to purchase their own materials in some of the courses offered in design.

102-5 Design Fundamentals. Dialogue, problems and experimentation are used to illuminate the creative problem-solving processes and fundamental cognitive skills of the designer. The individual engages in a variety of projects dealing with such subjects as visual communications, environmental planning, structures, and product design.
103-3 The Way Things Work. A study of various contemporary artifacts designed for our environment and how they work. This course will not be a technical course but a general overview of these artifacts and how they perform the functions they were designed for.

201-3 Survey of Design. A critical study of a design field from prehistoric periods to the modern era with reference to the social, political, and technological movement which affected their development.
202-3 Basic Materials and Processes. Introduction to tools and skills used in the manipulation of wood, metal, and plastics. Emphasis is placed on projects selected by the students to enhance their ability to solve problems in terms of specified materials and processes.
252-3 Human Factors. An introduction to basic human-machine concepts specifically oriented to design students. Subjects include sensory and motor processes, space and arrangement, and environmental factors in design. Prerequisite: 152.
254-3 Introduction to Graphic Arts Photography. This course is divided into two parts: an exploration into the techniques of three dimensional model making as a communication and research tool; and an introduction to the basic techniques of photographic image generation, experimentation in photographic techniques and materials, and transmission of ideas through the photographic image.
300-3 Graphic Reproduction. Exploration of the various techniques and methods utilized by the designer in preparing communication messages for production. Coursework will deal in such topics as paste-up, keyline, scaling photography, cold type and photocomposition, typography, and offset duplication. Prerequisite: 254.
301-3 Structures for Designers. Description and design of elementary physical structures. Includes survey of architectural design. Introduces the computer as a tool for drawing geometrical forms.
302-3 Applied Systems Theory to Design. A pragmatic design course emphasizing the application of systems theory to the design of special environments; e.g., environments for the handicapped, the blind, paraplegics, the elderly, etc. Students have the option of selecting their own projects which they carry through from the conceptual and analytical stage to construction of models. Prerequisite: 152.
303-3 Design Foresight and Assessment. Introduction and overview of the foresight and assessment functions for designers. Includes an exploration of alternative futures and futures-creating methods, types and procedures of planning, implementation processes and techniques, and assessment of the consequences of proposed action.
304-3 Type as Image. An introduction to the field of reprographics, reproduction of images by means of office copying and duplicating equipment. Coursework will include an examination of the processes available, a survey of the equipment and methods, and graphic standards and techniques that can be utilized.
312-3 Product Design Analysis. An introduction to product evaluation techniques, such as human engineering, consumer safety, environmental impact, design liability, and patent protection.
313-3 Materials and Methods I. Exploration of methods, tools and materials for developmental prototyping.
322-3 Visual Communication I. Introduction to visual communication, including exploration of words, images, and symbols. Experimentation with graphic techniques and processes. Emphasis on solving basic visual communication problems. Prerequisite: 304, Art 100a and 107.
332-3 Survey of Urban Design. Introduction to the study of human settlements. Estimation of the ways cities, landscapes, and buildings have been built. Critical analysis, through historical and contemporary case studies, of the major issues and problems of the urban environment as they affect the individual.
333-4 Urban Design I. Continuation and development of skills learned in core courses by work in projects of small scale dealing with a variety of environments. Prerequisite: 332 or concurrent enrollment.
342-3 Introduction to Computer Graphics. Introduction to the use of the computer in the production of graphic images. Topics include the definition of two- and three-dimensional data, the generation of engineering and perspective images, and animation. Prerequisite: Computer Science 202.
350-3 Research Methods for Designers. An exploration of research methods for designers, both qualitative and quantitative, including search methods, observational methods, experimental methods, and systems, simulation, and gaming methods.
351-3 Cross Cultural Problem Solving. Development of design projects within the cultural conditions outside of the United States through field study trips when possible to arrange or orient lectures and other insight material. A hypothetical follow through on the development of design projects within a selected country exposing sociological and marketing pertinent of ensuing limitations of that country.
352-3 Design Methodology. The processes of design, from recognition of a need, through definition of the problem, its analysis, synthesis and evaluation of feasible solutions; selected design methods will be explored, with special emphasis given to design science methodology.
353-3 Projected Images. Experimentation into various forms of projected images as a form of visual expression and documentation. Prerequisite: 150, 254 or concurrent enrollment.

354-3 Introduction to Design Science. An exploration of the seminal work of Buckminster Fuller: his philosophy, conceptual tools and generalized principles; introduction to synergetics; comprehensive anticipatory design science, and the World Game.
362-3 Product Development. Investigation and identification of significant product related human need areas. Application of development methodologies in selected product design projects.
372-3 Visual Communication II. An investigation of the theories and methods of visually communicating concepts and information. Emphasis is placed on the analysis of the communications need and progresses through the production of items in prototype form. Prerequisite: 102, 254 or concurrent enrollment, 322 or consent of chairperson.
373-3 Serigraphy. Introduction to serigraphy (silk screen printing) as a tool of visual communication. The course will be especially useful in providing the graphic reproductive capability for testing designs made in other classes. Various kinds of stencils will be explored: photographic as well as hand made. Prerequisite: 254.
381-4 Urban Design II. Continuation of Urban Design I with emphasis on projects of greater scale. Educational environments and others of a socially useful nature will be examined. Prerequisite: 333, 380 or concurrent enrollment, consent of chairperson, and declared specialization in urban design.
401-3 Problem Solving in Applied Design. A design team approach solving real problems utilizing the methods and techniques acquired in the design program. Prerequisite: senior standing or consent of instructor.
405-3 Environmental Graphics. An introduction to the theory and practice of designing meaningful symbols for the public environment, including spatial perception and typography as related to signage systems, imagery, symbols, color, and light. Not for graduate credit.
406-3 Portfolio. An investigation and implementation of the planning, production and management of interface information such as resume and presentation of self and portfolio. Not for graduate credit. Prerequisite: senior standing.
412-3 Practicum in Product Design. Advanced comprehensive product design projects developed into production prototypes. Not for graduate credit.
413-3 Professional Practice in Product Design. The study of designer/client relationships, business practices, design office procedures, and professional ethics. Prerequisite: senior standing or consent of instructor.
422-3 Visual Communication III. Principles of visual message making and investigation of symbols as they are used in communication. Study includes the development of contemporary communication techniques including photographics, topography, color, and illustration as well as learning to identify techniques and processes of communication. Not for graduate credit. Prerequisite: 372.
432-3 Landscape Architecture. Study of the principles of urban and regional landscape architecture and an introduction to the elements of landscape and architecture. Site analysis and site planning are studied in relation to structures and large scale developments. Technical aspects of site development are stressed. Prerequisite: 333.
450-1 to 6 Internship. Supervised work experience related to student's academic program and career objectives. Not repeatable for credit. Not for graduate credit. Prerequisite: consent of chairperson. Mandatory Pass/Fail.
462-4 Research in Product Design. An in-depth investigation and exploitation of a selected production material (plywood, sheet metal, plastic sheeting, etc.). Prerequisite: senior standing or consent of instructor.
463-4 Products for Special Populations. Products for special subset groups within greater population norms. May be of cross-cultural and interdisciplinary implementation. Not for graduate credit.
464-4 Environmentally-Integrated Products. Development of products integral to comprehensive environmental planning. Not for graduate credit.
465-2 to 4 Independent Study in Product Design. Creative project developed by student and faculty sponsor and approved by director. Prerequisite: 462.
472-3 Visual Communication IV. Advanced problems in visual communication: the development of a corporate identity. Assigned projects simulate design studio procedures for solving contemporary visual identity problems. Prerequisite: 422.
494-3 Senior Thesis. Creative project development individualized by the student with the faculty sponsor. Not for graduate credit. Prerequisite: senior standing.

Asian Studies (Minor)

The Asian studies program includes a variety of courses of the languages, civilizations, and contemporary issues of Asia. The program is intended to prepare a student for a number of career options with Asia interests. Through this pro-

gram, a student may prepare for more advanced work on another campus, may develop a teaching specialty, or may broaden skills and knowledge which would be useful for professional and occupational interests in Asia.

A minor in Asian studies requires a minimum of 20 hours selected from a list of approved courses. Not more than eight hours may be taken in any one department for credit toward the 20 hours.

A student may major in Asian studies by means of the special major program of the University for the Bachelor of Arts degree. The student in this program has to meet University, General Education, and the College of Liberal Arts requirements. The student's special major would not be approved unless at least 30 hours selected from a list of approved courses with at least three disciplines included are completed. Students interested in this program are encouraged to take at least two years of an Asian language.

Associate Degree Nursing (Program, Major [Nursing], Courses)

The associate degree nursing program, offered through the Southern Illinois Collegiate Common Market, is developed as an open-curriculum model and is designed to provide career mobility for persons who have completed a practical nursing program or its equivalency through formal or informal methods. Students will be given an opportunity to validate past experiences through utilization of a comprehensive testing program.

Facilities limit enrollment to twelve full-time students, but since each student has different proficiencies, there is a possibility of openings during the academic year as students complete requirements. In addition to gaining admission to the University, the applicant must demonstrate satisfactory levels of previous nursing skills and knowledge by taking the Psychological Corporation Pre-Entrance Examination for Schools of Nursing and Nursing Achievement Examinations. Requests for information should be directed to nursing, School of Technical Careers.

After assessment by the nursing faculty, an individualized prescriptive-type educational program will be developed with each student. Didactic instruction will be implemented mainly through a variety of multi-media teaching techniques with individualized assistance from the nursing faculty. Clinical experience will be gained through various cooperating hospital facilities in a designated geographical area of southern Illinois. Since the students will be traveling to several hospitals, it is essential that they have access to transportation. General education courses will be required in the areas of communication, sciences, and social studies. The nursing courses follow a unique calendar, consequently the student's schedule will extend beyond the normal semester periods.

Additional expenses of approximately $500 are required to cover textbooks, the cost of uniforms, the pre-admission examinations, liability insurance, workshops, and other items.

This program is designed to prepare the student for the practice of nursing as defined in the Illinois Nurse Practice Act and meets the requirements for accredited schools in associate degree nursing in Illinois.

Upon satisfactory completion of the program the student will be eligible to write the Illinois State Board Nursing Examination and to become a registered nurse. A registered nurse may be employed in private offices, school systems, hospitals and clinics, nursing homes, industrial health clinics, or other health care facilities.

Associate in Applied Science Degree, School of Technical Careers

Requirement for Major in Nursing

Graduation from an accredited school of practical nursing or equivalent — minimum required transfer of credit 20

General Education: GE-A 106, GE-B 202, GE-D 101, 153, and an approved physiology course	15
Associate Degree Nursing 201, 202, 203, 204, 206, 208, 209, 210, 211, 212, 213, 214	30
Total	65

Courses

201-3 Introduction to Conceptual Framework. Using the individualized modular approach to education, this course introduces the student to the concepts which are the foundation of the nursing curriculum. Emphasis is placed on the exploration and study of basic human needs and the components of the nursing process. Learning opportunities include both theory content and selected clinical experiences. Material fee: $20. Prerequisite: acceptance into the associate degree nursing program.

202-2 Maternal-Neonate Nursing Interventions. This course is designed to provide the student with greater depth and broader perspectives of the antepartal, intrapartal, and postpartal neonatal periods. A basic understanding of normal reproductive function and birth process will be necessary in order to study the nursing care of pathophysiological conditions. Emphasis is placed upon the family involvement and cultural needs of the child bearing family. Learning opportunities include both theory and selected clinical experiences.

203-3 Psychiatric Nursing Interventions. This course is designed to provide the student with further exploration and study into the concepts of mental health and mental illness. Emphasis will be placed on developing skills in therapeutic communication techniques, principles of psychiatric nursing, interpersonal relationships, and identifying psychosocial needs of the emotionally ill patient. Learning opportunities include both theory content and selected clinical experiences.

204-2 Neurological Sensory Nursing Interventions. This course is designed to further the student's knowledge of neurological and sensory function and those associated disorders commonly encountered in nursing practice. Emphasis will be placed on the development of neurological assessment skills and the use of the nursing process for care of patients with major neurological and sensory dysfunction. Learning opportunities include both theory content and selected clinical experiences.

206-3 Orthopedic-Dermatological Nursing Interventions. This course is designed to further the student's knowledge of skeletal, muscular, and skin function and those disorders commonly encountered in nursing practice. Emphasis will be placed on assessing, analyzing, planning, implementing, and evaluating nursing care for those patients experiencing disorders associated with joints, bones, muscles, and skin. Learning opportunities include both theory content and selected clinical experiences.

208-2 Metabolic-Endocrine Nursing Interventions. This course is designed to further the student's knowledge in metabolic-endocrine function and those associated disorders commonly encountered in nursing practice. Emphasis will be placed on application of the nursing process in caring for patients experiencing metabolic-endocrine dysfunction. Learning opportunities include both theory content and selected clinical experiences.

209-2 Community Health Nursing. This course is designed to introduce the student to concepts in community health nursing. The student will learn that the health and well-being of citizens in the community is an integral part of nursing. The problem-solving approach will be applied to identify health problems of clients in a variety of community clinical agencies and settings with special emphasis on community resources for special health problems, communicable diseases, problems accompanying disasters, and special problems of senior citizens.

210-3 Cardiovascular Nursing Interventions. This course is designed to provide the student with further study and depth into cardiovascular function and common pathophysiological processes. Emphasis will be placed on the application of the nursing process, health maintenance, and disease prevention. Learning opportunities include both theory content and selected clinical experiences. Material fee: $10.

211-2 Respiratory Nursing Interventions. This course is designed to provide the student with further study of pulmonary function and principles of pathophysiology pertaining to common respiratory problems. Emphasis will be placed on the application of the nursing process in caring for patients experiencing respiratory restriction or obstruction. Learning opportunities include both theory content and selected clinical experiences.

212-3 Gastrointestinal/Genital-Urinary Nursing. This course is designed to provide the student with further study and depth into gastrointestinal and genital-urinary function and into their associated pathophysiological processes. Emphasis will be placed on assessing, analyzing, planning, implementing, and evaluating nursing care for patients with common gastrointestinal and genital-urinary disorders. Learning opportunities include both theory content and selected clinical experiences.

213-2 Nursing Today and Tomorrow. Leadership in nursing, transition to the new

graduate role, and current issues in nursing are the integral components of this course. Students will be given an opportunity to apply their knowledge and nursing skills in selected observational practical experiences.

214-3 Pediatric Nursing Interventions. This course is designed to provide the student with specific aspects of growth and development. The nursing process will be utilized to provide nursing care to meet the physical, intellectual, emotional, and social needs of the pediatric patient. Emphasis will be placed on health promotion, family involvement, and cultural needs of the hospitalized child or adolescent. Learning opportunities include both theory content and selected clinical experiences.

Athletic Training (Minor)

(SEE PHYSICAL EDUCATION)

Automotive Technology (Program, Major, Courses)

The fundamental objective of the automotive technology program at the School of Technical Careers is to provide students with an opportunity to obtain a solid foundation of knowledge, experience, and skills that will assist in job entry and career advancement in automotive service.

The automotive service industry has seen, and will continue to experience, rapid changes in technology. Perhaps the greatest changes will occur within the next decade as more fuel-efficient, less polluting motor vehicles become more commonplace. To service today's vehicles and the vehicles of the future will require highly skilled service technicians who will be skilled in the technologies that have been unknown until just a few years ago. The skills that will be required will be varied and complex and will require service technicians to specialize in certain specific service areas.

This program recognizes the various needs of the industry and the needs of its future technicians and will offer an opportunity to obtain a solid foundation of knowledge and provide flexibility for a student to develop a specialty of the student's choosing.

During the first year, each student will be required to enroll in a series of core courses which will provide the student with the opportunity to obtain and develop those skills and technical information considered essential to all service technicians.

During the second year, the student may choose any four of eight possible areas. In most cases, these courses will deal with advanced instruction in areas covered in the core courses. In each case, however, the student will select the courses and, after completing this work and the general education requirements, the student will be eligible for the associate degree.

Instruction in the automotive technology program is geared to a thorough presentation of basic fundamental concepts and reinforced with practical applications of those concepts with structured laboratory activities and service and diagnosis of live automobiles. In a vast majority of the courses all units studied will be working or operational units and dynamic testing of the units is an integral part of the course.

Additional expertise is provided to the program through an advisory committee composed of persons chosen for their knowledge of the field and their interest in education. Current members are: Mr. Dick Blumenstock, district service manager, Pontiac Motor Division; Mr. Al Bradshaw, supervisor of service training, Chrysler Motors Corporation; Mr. James F. Lane, zone service manager, Oldsmobile Division, General Motors Corp., Mr. James Racz, DuPage County Highway Department; Mr. Robert Richert, district sales manager, Toyota Motor District; Mr. Donald Vogler, Vogler Ford, Carbondale, Mr. Harry Wiggs, Carbon-

dale Auto Supply, Mr. Ron R. Schriewer, D.S. engineer, Ford Motor Co., St. Louis, Mo., Neil W. Swartz, American Motors Corp., dealer warranty analyst, and Mr. David Elder, service manager, Jim Pearl, Inc., Carbondale.

The student should expect to spend about $300 for a basic tool kit consisting of both domestic and metric tools and supplies.

The associate degree can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-instructional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Automotive Technology

GE-D 101 and 153	6
School of Technical Careers 102, 105a, 107a, b, 108	10
Automotive Technology 101, 103, 105, 107, 115, 121, 123, 125, 127	32
Thirty hours of selected 200-level Automotive Technology courses	30
Total	78

Courses

101-4.5 Automotive Engines and Fuel Systems Laboratory. Enables the student to learn the fundamental service techniques and procedures required to service current automotive engines through meaningful hands-on experience on live engines. The student will disassemble laboratory engines, inspect for wear and damage, and reassemble the engine to operating condition according to manufacturer's specifications. The student will also be given specific instruction regarding the adjustment, repair, and diagnosis of carburetors. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 121.

103-4.5 Brakes and Chassis Laboratory. Designed to provide the student with work experience performing various chassis, suspension, and brake services on live vehicles. Complete brake overhaul, front end rebuilding, wheel alignment, and wheel balancing are some of the tasks performed. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 123.

105-4.5 Engine Electrical Laboratory. Allows the student to apply the fundamental theories of electricity to the actual diagnosis and testing of the battery, charging, starting, and ignition systems. Hands-on experience on live and laboratory units is the basic part of this course. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 125.

107-4.5 Drive Trains Laboratory. Provides the student with hands-on experience in diagnosis and repair of the modern vehicle drive line. Service activities such as overhaul procedures for 3, 4, and 5-speed manual transmissions, clutch service, universal joint repair, drive line angle measurement, and complete differential repair will be included. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 127.

115-2 Related Shop Laboratory. Provides the student with an opportunity to learn and perform routine service operations and small repairs that are required of all automotive service personnel. Such topics as thread repairs, fasteners, drill sharpening, broken stud removal, copper and brass fitting identification and fabrication, and basic acetylene welding and brazing are examples of some of the course content. Theory-laboratory will be four clock-hours per week for eight weeks.

121-3 Basic Automotive Engines and Fuel Systems Theory. Explanation of the theory of operation and design characteristics of the four-stroke cycle gasoline engine as well as the basic automotive fuel system and carburetor. The different engine designs, basic carburetion and ignition, horsepower and torque computation, and related systems of engine operation are examples of some of the topics to be covered. Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 101.

123-3 Brakes and Chassis Theory. Provides instruction in the physical laws of hydraulics and pneumatics and their application to the modern brake and steering systems. Included is the study of steering geometry and suspension service procedures. Also covered is brake diagnosis and repair, brake machining, and power brakes. Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 103.

125-3 Engine Electrical Theory. Provides the student with an opportunity to learn the fundamental theories of electricity and to apply these fundamentals in the operation of batteries, cranking motors, solenoids, relays, alternators, generators, regulators, and ignition systems. Special emphasis is placed on meter use and sound diagnostic procedures.

Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 105.

127-3 Drive Trains Theory. Deals specifically with the units needed to transmit the power of the automobile from the engine to the rear wheels. Presents to the student such things as clutches, standard transmissions 3, 4 and 5-speed, propellor shafts and differentials, their principles of operation, theory involved, and repair procedures. Included in this course is also basic study of planetary gears and fluid couplings. Theory will be six clock hours per week for eight weeks. Prerequisite: concurrent enrollment in 107.

201-4.5 Automatic Transmission Laboratory. Permits the student to acquire practical experience in the service procedures required on automatic transmissions. Proper disassembly, inspection, measurement, and reassembly will be stressed along with dynamic testing on a dynamometer of the transmissions being serviced. Outside vehicles will be repaired with emphasis on proper diagnosis before repairs are performed. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 121, 107, 127, and concurrent enrollment in 221.

203-4.5 Automotive Power Accessories Laboratory. Assists the student in developing a comprehensive understanding of the diagnostic and repair procedures required of the various comfort options and accessories commonly found on current production automobiles. Diagnosis and repair of automotive lighting systems and dash instrumentation will also be included. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 105, 125 and concurrent enrollment in 223.

204-4.5 Automotive Air Conditioning Laboratory. Provides the student with an opportunity to obtain practical experience in the actual service and diagnostic procedures required of all current air conditioning systems. Service activities presented will consist of all operations required of the refrigeration system including compressor rebuilding and the diagnosis and repair of factory-equipped systems. Laboratory will be 14 clock hours per week for eight weeks. Prerequisite: 105, 125, and concurrent enrollment in 224.

205-4.5 Advanced Fuel and Emission Systems Laboratory. Students will diagnose, overhaul, and adjust the current domestic types of carburetors. Heavy emphasis will be on engine performance testing and diagnosis of engine malfunctions through the use of test equipment such as oscilloscopes and infra-red testers. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 225.

207-4.5 Advanced Brakes and Chassis Laboratory. Provides the student with the opportunity to acquire practical experience in the actual service of such things as power steering, steering columns, anti-skid brakes, load leveling devices, and total vehicle alignment. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 103, 123, and concurrent enrollment in 227.

208-4.5 Advanced Engine Laboratory. Allows the student the opportunity to develop those skills and service techniques that are considered essential to perform quality engine rebuilding. Service operations such as valve refacing, cylinder head, engine block, crankshaft, rod, and piston reconditioning are examples of activities that will be performed on live vehicles scheduled for this purpose. Diagnosis of engine mechanical failures and noises will also be emphasized. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 228.

209-4.5 Advanced Electrical Systems Laboratory. Designed to provide detailed instruction on the approved service procedures for diagnosis and repair of current ignition, charging, and starting systems. These activities will be performed on live vehicles and laboratory units. Laboratory will be fourteen clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 229.

210-4.5 Diesel Fuel and Electrical Systems Laboratory. Laboratory enables the student to learn the fundamental service techniques and procedures required to diagnose and service current automotive diesel fuel injection and electrical systems. The student will diagnose and disassemble diesel fuel injection components, inspect for wear or damage, and reassemble to operating condition. Prerequisite: 101, 105, 121, 125 and concurrent enrollment in 230.

221-3 Automatic Transmission Theory. An in-depth study of the current automatic transmissions offered by the major manufacturers. This course deals with the torque converter, planetary gear systems, methods of clutching, and hydraulic controls. Special emphasis will be placed on methods of diagnosis and repair of problems. Oil circuitry will be presented in detail. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 121, 107, 127 and concurrent enrollment in 201.

223-3 Automotive Power Accessories Theory. Allows the student to obtain a sound understanding of the theory of operation of the various electrical accessories and popular comfort options. Examples of units studied are: power windows, power seats, windshield wiper motors, dash instruments, heated rear windows, body lighting and warning buzzer systems. Assisting the student to interpret electrical wiring diagrams will be emphasized.

Theory will be six clock hours per week for eight weeks. Prerequisite: 105, 125 and concurrent enrollment in 203.

224-3 Automotive Air Conditioning Theory. Allows the student to obtain in-depth instruction in the fundamental principles of refrigeration systems which are applicable to all current systems, plus the theory of operation of the various controls used on factory installed units. Such topics as the refrigeration cycle, temperature regulation, anti-frost controls, and air conditioning systems testing are examples of the material studied. Theory will be six clock hours per week for eight weeks. Prerequisite: 105, 125 and concurrent enrollment in 204.

225-3 Advanced Fuel and Emission Systems Theory. Deals specifically with the theory of operation of most types of carburetors used on domestic automobiles. The emission control systems and laws concerning automotive emission standards will also be a major topic of the course. Proper tune-up procedures to meet emission standards will be studied in detail. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollments in 205.

227-3 Advanced Brake and Chassis Theory. An in-depth study of brakes and suspension systems to include such topics as power steering, columns, anti-skid brakes, load leveling devices, and total vehicle alignment. Theory will be six clock hours per week for eight weeks. Prerequisite: 103, 123, and concurrent enrollment in 207.

228-3 Advanced Engine Theory. Major emphasis will be on piston, rod, crankshaft, cylinder head, and combustion chamber designs of the modern automotive engine. The student will have the opportunity to apply the principles that are directly related to service operations, diagnosis, and repair of mechanical malfunctions of the engine. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125 and concurrent enrollment in 208.

229-3 Advanced Electrical Systems Theory. Emphasis will be on operation, diagnosis, and repair of under-the-hood electrical systems. Electronic ignition and charging systems will be studied in detail. Also in-depth instruction will be provided in the operation, diagnosis and repair of starter motors and starter control circuits. Theory will be six clock hours per week for eight weeks. Prerequisite: 101, 121, 105, 125, and concurrent enrollment in 209.

230-3 Diesel Fuel and Electrical Systems Theory. Theory provides the student with an opportunity to learn the fundamentals of automotive and light truck diesel fuel injection systems, and electrical systems unique to diesel engine operation. The course consists of theory of operation, design characteristics, diagnosis and service of automotive diesel fuel systems. Theory will be six hours per week for eight weeks. Prerequisite: 101, 105, 121, 125, and concurrent enrollment in 210.

301-20 (5, 5, 5, 5) Advanced Studies in Automotive Electronics. Provides the student with the opportunity for advanced studies in theory, diagnosis, and service of electronic circuitry and computerized controls that are now an intergral part of the automobile. The student may choose any of the following areas: **(a)** electronic engine controls, **(b)** computer controlled fuel and emission systems, **(c)** body and chassis electronics, **(d)** comfort control systems. Emphasis will be on development of advanced technical skills and diagnosis techniques within the subject area. Students will be required to complete a project under the supervision of the sponsoring faculty member. Each area of study will require 20 clock hours of class per week for eight weeks. Prerequisite: AAS degree in automotive technology or consent of program coordinator and required tool set.

302-20 (5, 5, 5, 5) Advanced Studies in Automotive Power Trains. Allows the student to gain practical experience in the latest diagnosis and service techniques required of the new and emerging technologies that constitute the modern automobile design. The student may choose any of the following areas: **(a)** engine machining techniques, **(b)** diesel fuel injection service, **(c)** conventional and front wheel drive transmissions, **(d)** uni-body and front wheel suspension and brake systems. Emphasis will be on the development of advanced technical skills within the subject area. Students will be required to complete a project under the supervision of the sponsoring faculty member. Each area of study will require 20 clock hours of class per week for eight weeks. Prerequisite: AAS degree in automotive technology or consent of program coordinator and required tool set.

Aviation Flight (Program, Major, Courses)

The aviation flight program includes flight courses through the commercial pilot certificate and the instrument pilot rating. To insure the student more mobility and flexibility during employment, the flight instructor certificate and multi-engine rating courses will be included in the program. Flight theory courses will supplement and complement each flight course. In order to maintain the highest

possible standards for flight and ground theory courses, each lesson of every course has been submitted and approved by the Federal Aviation Administration. In addition, every graduate of the flight courses will go through a rigorous oral and flight examination administered by an FAA designated examiner before being issued a pilot's license or certificate. Also, general education and basic science courses will be supplemented with related technical courses to enhance the student's professional value to the aviation industry.

The program has an advisory committee formed from among industry and community leaders. The advisory committee has the following functions: 1) assist in developing policy relative to the program, which includes performance measures in the review and evaluation of the program; 2) analyze labor market and industry needs relative to program intake and output; 3) communicate between industry and the program; 4) assist in conducting activities designed to assist the community as it relates to the program. In addition, FAA designated examiners will examine the student's performance and effectiveness at least four times during the course of the program.

Associate In Applied Science Degree, School Of Technical Careers

Requirements for Major in Aviation Flight

GE-A 330, GE-B 212, GE-D 101, Mathematics 111, Physics 203a, and School of Technical Careers 102	19
Aviation Flight 200, 201, 202, 203, 204, 205, 206, 207, 260, 300, 303	25
Avionics Technology 101	3
Electronics Technology 100	3
Ten hours of electives selected from: GE-A 106, GE-A, GE-B, or GE-C 221, GE-B 202, GE-C 208, Economics 214	10
Total	60

Minor

The minor in aviation flight includes flight courses through the commercial pilot certificate and the instrument rating. Currently, students from twenty different majors are involved in flight training courses to enhance their career opportunities and marketability.

Requirements for Minor in Aviation Flight

Aviation Flight 200, 201, 202, 203, 204, 205, 206	15
GE-A 330	3
One of the following: Advanced Technical Studies 370, 371, 372, 373, 374, 375, 376	3
Total	21

Courses

200-3 Primary Flight Theory. Prepares the beginning aviation student for the FAA Private Pilot Written Examination. Consists of instruction in aerodynamics, FAA regulations, primary navigation, use of computer, weather, and radio navigation.

201-2 Flight — Primary. Prepares the beginning student in flight to pass the practical examination (flight test) for the Private Pilot Certificate. Consists of 49 hours of flight training, which includes 30 hours of dual flight instruction, five of which is in a simulator; and 19 hours of solo flight. Each training flight is also preceded by a briefing by the instructor and a post-flight critique. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport.

202-2 Flight — Basic and Intermediate Theory. Continuation of ground school above the primary level. Course consists fo 32 hours of classroom instruction in Federal Aviation Regulations pertaining to operations relating to commercial flight, aerodynamics, safety, weather, and the safe operation of aircraft. Prerequisite: 200.

203-1 Flight — Basic. Beginning course in preparation for the Commercial Certificate. Course consists of 48 hours of flight training. Includes pre-flight briefing and post-flight critique by the flight instructor. Of the 48 hours, ten hours are dual flights and 38 hours are solo flights. Includes dual night flights and 17 hours of solo cross-country. This course carries substantial charges which may change from time to time. For exact charge contact the Air Institute and Service, Southern Illinois Airport. Prerequisite: 201.
204-1 Flight — Intermediate. Continuing preparation for the Commercial Certificate. Consists of 48 hours of flight training. Includes pre-flight and post-flight briefing by instructor. Includes 10 hours of dual flight instruction and 38 hours of solo flight. The solo includes 5 of night flight, 15 of solo cross-country, and 18 of solo practice on advanced maneuvers.
205-2 Flight — Instrument Theory. Course is directed to the theory of flight by instrument. Consists of thirty-two hours of classroom instruction in Federal Aviation Regulations pertaining to instrument flight, navigation by radio aids, aviation weather and function, use, and limitations of instruments required for instrument flight. Prerequisite: 202.
206-4 Flight — Instrument and Advanced. This flight course will complete requirements for the Commercial Certificate, and will consist of 47 hours. Included in the 47 hours are 22 hours of instrument flight instruction in an airplane, 10 hours in an instrument simulator, 10 hours of dual on flight maneuvers, and five hours of solo practice on maneuvers required to pass an FAA commercial flight test. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport. Prerequisite: 203, 204.
207-1 Flight — Multi-Engine Operations. Prepares the student for the FAA Multi-Engine Rating (airplane). Includes ten hours of flight training in multi-engine aircraft; and ten hours of individual ground instruction. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport. Prerequisite: 201.
260-4 Reciprocation and Jet Airplane Systems. Students will have knowledge of construction, operation, and components of reciprocating and jet powerplants. They will understand the operation and components of cabin pressurization and air conditioning systems, flight control systems, landing gear systems, fuel systems, electrical systems, anti-icing systems, and fire detection systems.
300-2 Flight-Instructor (Airplane). Prepares the commercial pilot for an FAA Flight Instructor Certificate. Includes 20 hours of dual flight training and 40 hours of specialized ground instruction. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport. Prerequisite: 206.
301-1 Flight-Instructor (Airplane-Multi-Engine). This course consists of five hours of dual flight instruction and 10 hours of classroom instruction. Prepares the holder of flight instructor certificate for the addition of the multi-engine flight instructor rating. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport. Prerequisite: 300.
302-1 Flight-Instructor (Airplane Instrument). Designed to prepare the flight instructor to teach instrument flying, and to acquire the Instrument Flight Rating. Course consists of ten hours of dual flight instruction and 15 hours of classroom instruction. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport. Prerequisite: 300.
303-3 Flight Instructor Ground School. This course is designed to aid the student who is obtaining a flight instructor's rating. It will cover principles to teaching as well as practical aspects of teaching flight maneuvers necessary for instruction. Prerequisite: 205.
307-3 Lear Jet Theory and Flight I. Prepares the advanced flight student for the duties and responsibilities of a Lear jet co-pilot. This course consists of 40 hours of Lear jet theory and systems ground training and 2 hours of inflight training and 4 hours of pre-flight and post-flight ground discussion. Prerequisite: 206, 207.
308-3 Lear Jet Theory and Flight II. Prepares the advanced flight student for the duties and responsibilities of Lear jet co-pilot and part of the training required for the Lear jet type rating. This course consists of 40 hours of Lear jet theory and systems ground training and 5 hours of inflight training and 10 hours of pre-flight and post-flight ground discussion. Prerequisite: 206, 207.
309-4 Lear Jet Theory and Flight III. Prepares the advanced flight student for the duties and responsibilities of a lear jet captain and the knowledge and experience for the Lear jet typerating. This course consists of 40 hours of Lear jet theory , 17 hours of inflight training, and 17 hours of pre-flight and post-flight ground discussion. Prerequisite: 206, 207.
400-1 Flight-Airline Transport Pilot. Prepares the commercial pilot for the FAA Airline Transport Pilot Certificate. Includes 40 hours of ground instruction and 20 hours of flight training in single-engine or multi-engine aircraft. This course carries substantial charges which may change from time to time. For exact charges contact the Air Institute and Service, Southern Illinois Airport. Not for graduate credit. Prerequisite: 206.

Aviation Maintenance Technology (Program, Major, Courses)

Skilled technicians are in demand in the aviation industry, both in airlines and general aviation. The industry demands people who possess a wide range of knowledge and ability provided by general education as well as special technical training.

The student learns reciprocating and jet powerplants, cabin environment and jet transport systems, hydraulics, fuel systems, ignition-starting systems, carburetion and lubricating systems, instruments, and powerplant testing in coordinated classroom and laboratory work. The program is fully accredited by the Federal Aviation Administration. Students who wish to qualify for the FAA airframe and powerplant license are required to take a two-course post-associate specialization.

Instruction is conducted at the Southern Illinois Airport between Carbondale and Murphysboro in a combination laboratory-classroom-hangar facility.

The student should expect to spend about $360 for a tool kit and special study materials.

Executives in the aviation industry constitute an advisory committee which serves the program. Current members are: Ross K. Bennett, vice president of operations, Hartzog Aviation, Rockford, Illinois; Raoul Castro, Aerospace International Management Systems, Inc., Wheaton, Illinois; H. Erv Chandler, supervisor of training, Bell Helicopter Textron, Fort Worth, Texas; R. Craig Christie, vice president, marketing, King Radio Corporation, Olathe, Kansas; Roy S. Davis, retired director of technical services, Trans World Airlines, Inc., O'Hare International Airport, Chicago, Illinois; Robert J. Graham, supervisor, production control, American Airlines, O'Hare International Airport, Chicago, Illinois; Ira B. Hartzog, president, Hartzog Aviation, Rockford, Illinois; Robert Kopitzke, 747 ground school instructor, American Airlines Flight Academy, Fort Worth, Texas; A. Edward Langhorst, manager, aircraft engine group, Evendale Technical Training School, General Electric Company, Cincinnati, Ohio; George Powell, director of product support, Bell Helicopter Textron, Fort Worth, Texas.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Aviation Maintenance Technology

GE-D 101, 118, 152	8
School of Technical Careers 105a	2
Aviation Maintenance Technology 110, 111, 112, 113, 114, 116, 201, 203, 204, 205, 206, 210, 211, 212, 213, 214, 215, 216	67
Elective (in social science)	5
Total	82

Courses

110-4 Aircraft Structure-Fabrication and Repair. Students will be able to identify and select materials employed in aircraft construction. Using appropriate FAR's, they will demonstrate competence in repair of honeycomb, fiberglass, welded, wood, or fabric aircraft members. The student will inspect aircraft members for defects and, if necessary, inspect completed repairs for airworthy condition.

111-4 Materials Processing. Students will be able to identify, select, and inspect aircraft hardware and materials. They will be able to select and apply appropriate cleaning materials and to implement corrosion controls. They will become proficient in the use of precision measurement equipment and related inspection tools.

112-4 Aircraft Electricity. Students will have basic knowledge of electricity generation, AC and DC circuitries, and controls. They will be able to solve problems associated with electrical measurement (AC and DC), circuit interpretations and inspection, aircraft electrical load analysis, circuit malfunctions, and circuit or component servicing. They will have as an introduction, a basic knowledge of aircraft electronics.

113-2 Federal Aviation Regulations. Students will be able to select and use FAA technical and legal publications in order to perform the duties of an aircraft technician.
114-2 Aircraft Weight and Balance. Students will fully understand and solve problems of aircraft weight and balance. They will be able to perform weighing, computation of C.G., and establishing of equipment list.
116-3 Aircraft Instruments. Students will have a knowledge of operation, installation, marking, and interpretation of synchro and servo systems, aircraft and powerplant instruments. They will be able to install, adjust, and calibrate these instruments in accordance with FAA and manufacturers' recommendations.
201-2 Applied Science. Students will be able to apply and use the principles of applied science to describe the behavior of an aircraft powerplant, aircraft aerodynamics, strength and mechanical advantage of systems, including hydraulic, cabin environmental, carburetion, instrumentation. They will understand the application of aircraft finishing, both enamel, lacquer, and dope and fabric coverings, and understand the safety procedures to safely operate aircraft and powerplants for ground operational checks and servicing.
203-2 Aircraft Aerodynamics. Students will have a knowledge of flight theory and factors affecting aircraft in flight. They will explain and compare aircraft design features in subsonic, transonic, and supersonic aircraft. They will be able to assemble and rig various aircraft control systems, analyzing and correcting faulty flight characteristics.
204-4 Hydraulics (Aircraft). Students will have a knowledge of fluid theory and applied physics which relates to aircraft hydraulics. They will know the theory of operation, maintenance requirements, and adjustments of various hydraulic components and systems. They will be able to test, inspect, troubleshoot, and service hydraulic systems and overhaul malfunctioning components in accordance with FAA and manufacturers specifications.
205-6 Cabin Environment and Jet Transport Systems. Students will understand the atmospheric variables at different altitudes and the basic equipment required to cope with malfunction in the cabin pressurization and air-conditioning systems. Using the available information, jet transport aircraft and simulated training panels, they will understand the operation of and be able to identify the components of flight control systems, landing gear, fuel, anti-icing, and fire detection systems. They will be able to compare and analyze aircraft systems of current jet transport aircraft and to diagnose and resolve malfunction problems. They will have knowledge of procedures for aircraft and to diagnose and resolve malfunction problems. They will have knowledge of procedures for aircraft ground handling, APU operation, and system servicing.
206-3 Metals Processing. Students will be able to make appropriate sheet metal repairs using correct repair procedures, tools, and materials. They will be required to demonstrate correct use of and interpretation of structural repair diagrams and correct interpretation of charts and tables from AC 43.13-1A pertaining to materials and methods.
210-2 Aircraft Electrical Systems. The successful student should have a knowledge of the operation, repair, inspection, and service of small and large aircraft electrical systems, using schematic diagrams and training panels.
211-5 Reciprocating Powerplant. Students will have a knowledge of construction, operation, and timing mechanisms associated with aircraft reciprocating powerplants. They will be able to disassemble, clean, measure, inspect, and reassemble a powerplant to airworthy condition in accordance with appropriate FAA and manufacturers' regulations and practices.
212-5 Carburetion, Lubrication, and Fuel. Students will be able to demonstrate their competence in identifying fuel and oil system components and carburetors, understanding the operating principles of each. They will be able to inspect, adjust, troubleshoot, and overhaul these components according to manufacturers and federal regulations. They will be able to identify the grades of aviation fuels and lubricants and understand the characteristics and uses of each.
213-5 Ignition Systems. Successful students should have a knowledge of the operation, repair, inspection, and service of reciprocation and jet powerplant ignition systems and reciprocating starting system. They will be able to time, overhaul, and troubleshoot the various components of each system.
214-3 Propellers. Students will have a knowledge of the physical laws and design characteristics governing propeller operation. They will be able to identify components, troubleshoot, and adjust fixed and variable pitch propellers. They will maintain fixed pitch propellers, and the governor system for variable pitch propellors in accordance with FAA and manufacturers' standards.
215-5 Powerplant Testing. Students will have an understanding of the correct procedures and precautions to be observed during engine installation, ground operation, and fuel and oil servicing. They will be required to inspect and troubleshoot reciprocating and jet engines for airworthy condition and interpret engine instrument readings to diagnose engine malfunctions.
216-6 Jet Propulsion Powerplant. Students will be able to apply and understand physics laws related to jet powerplants. They will be able to identify and understand the operation

of jet engines and their components. They will be able to perform inspection, maintenance repair, troubleshooting, and adjustments of jet powerplants and accessories. They will be able to analyze engine performance and to interpret operational charts, graphs, and tables.
225-6 Aircraft Inspection. Students will be able to perform a 100-hour and an annual inspection of an aircraft. They will demonstrate knowledge of FAR's by checking appropriate AD's, classifying repairs, and pinpointing specific service problems. They will also complete the required maintenance forms, records, and inspection reports required by federal regulations. They will understand and be able to perform inspection under computerized aircraft maintenance programs.
230-6 Powerplant Inspection. Students will be able to perform periodic inspection of powerplants. They will demonstrate their knowledge of FAR and application of FAA ADs', Service Bulletins, and proper use of inspection equipment. They will use knowledge learned in the powerplant curriculum to perform malfunction analysis of powerplant and related systems. Live equipment is used on a return-to-service basis.
301-6 Helicopter Theory and General Maintenance Practices. The student will have in-depth knowledge of rotary wing aerodynamics, main and tail rotor systems, rotor blades, primary and secondary controls, and general maintenance practices to include inspection and nondestructive testing. Prerequisite: Federal Aviation Administration Airframe and Powerplant Technician licenses.
302-10 Helicopter General Maintenance Laboratory. The student will perform general maintenance on rotary wing main rotor systems, tail rotor systems, rotor blades, flight and powerplant controls to include malfunction analysis, tracking, static balancing, rigging, and repair. The student will perform general helicopter inspections and nondestructive testing including magnetic testing, dye penetrant testing, and boroscope inspection. Prerequisite: concurrent enrollment in 301.
304-6 Helicopter Power Train and Inspection. The student will have an in-depth knowledge of the operation, function and inspection of all rotational components of a rotary wing aircraft to include transmission, gear boxes, drive trains, and drive shafts. Prerequisite: 301 and 302.
306-10 Helicopter Power Train Lab. The student will perform all functions of overhaul concerned with rotary wing transmissions, gear boxes, and drive trains. The student will demonstrate skills in disassembly, inspection, reassembly, discrepancy analyzation, vibration analysis, and dynamic balancing. Prerequisite: concurrent enrollment in 304.

Aviation Management

(SEE ADVANCED TECHNICAL STUDIES)

Avionics Technology (Program, Major, Courses)

Avionics, or aircraft electronics, is a rapidly growing field requiring highly skilled technicians for work in the development, installation, and maintenance of the sophisticated avionics systems required for effective utilization of modern day aircraft by the aviation industry.

The avionics technician finds opportunities for employment with the airline industry, general aviation, and in aircraft manufacturing, where employees will install, maintain, test and repair airborne communications and navigation systems, airborne radar systems, and related equipment.

All instruction is programmed in a balanced combination of classroom lecture and actual "hands on" laboratory experience under the supervision of instructors who have extensive experience and expertise in their respective fields.

The student will have courses in basic direct current, alternating current, electrical power systems, airborne, auxiliary power systems, electrical generation and distribution, load transfer, solid state devices, aircraft communications and navigation systems, instrumentation systems, and aircraft integrated flight systems, receivers, and transceiver, pulse and microwave systems, antenna types, wave propagation and transmission lines, and Federal Aviation Administration and Federal Communication Commission regulations.

In addition to regular University tuition and fees, the student is required to purchase basic tool kits and study material at an approximate cost of $300.

Executives in the aviation industry constitute an advisory committee which serves the program. The current members are listed under aviation technology and they serve both programs.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale.

Associate in Applied Science Degree, School of Technical Careers

*Requirements for Major in Avionics Technology**

AVIONICS TECHNOLOGY MAJOR – AIRFRAME OPTION*

GE-D, 101, 118, 152	8
School of Technical Careers 105a, b	4
Aviation Maintenance Technology 210	2
Avionics Technology 101, 120, 125, 203, 204, 232, 233, 234, 235, 236, 237, 238	64
Total	78

*To meet Federal and industry requirements, the student should plan to take additional 300-level courses offered as a post-associate specialty.

Courses

101-3 Aircraft Systems. An introductory course in aviation primarily designed for the student who has little or no background in aviation, but desires to learn about the aircraft and its systems in use today. The course will cover light, heavy, and rotary wing aircraft found in today's civil fleet.

120-8 Avionics Circuit Analysis. The student will have an understanding of the laws and theories of elementary AC and DC circuits as they apply to avionics, as well as a basic understanding of avionic circuit devices. Various basic circuits and individual components will be analyzed from a theoretical and operational standpoint, utilizing both descriptive and analytical approaches. Lecture eight hours. Prerequisite: concurrent enrollment in School of Technical Careers 105a and 105b or consent of program coordinator.

125-5 Avionics Laboratory I. The student will be able to demonstrate and apply the theory studied in 120. Laboratory ten hours. Prerequisite: concurrent enrollment in 120 or consent of program coordinator.

203-3 Avionics Shop Practices. The student will study avionics installation requirements, layout procedures and equipment location. They will understand repair station certification, regulations, records, and certification of repairmen. Lecture three hours.

204-3 Avionics Shop Laboratory. The student will make and follow installation drawings or layouts. They will use the equipment and tools requirement to perform avionics equipment installations. Given a list of avionics equipment, they will make the installation, perform acceptance check on the equipment, and fill out required records. Laboratory six hours. Prerequisite: concurrent enrollment in 203 or consent of program coordinator.

232-10 Avionics-Electronic Circuits. Designed especially for students who have completed the Aviation Technology Program and wish to enter the Avionics Technology Program for a second major. Theory of operation of diode, practical rectifiers, DC to DC converter and airborne audio amplifier system both tube and transistor. Construction of basic avionic circuits and isolation of malfunctioning components. Perform repairs and testing of transistors and tube and tube type of avionic circuitries. Lecture eight hours, laboratory four hours. Prerequisite: Aviation Maintenance Technology 210, Electronics Technology 102 and concurrent enrollment in Avionics Technology 233.

233-5 Aircraft Communication and Navigation Systems Theory. Student will have knowledge of the theory of operation, calibration, and frequency selection of NAY-COM equipment. They will understand transceiver circuitries, closed frequency loop SCR circuits, audio amplifiers, inter-com systems, VOR navigation receivers, VOR converter, glide slope receivers, ADF receivers, and marker beacon receivers. They will be able to use avionics manufacturers maintenance and overhaul manuals and FAA regulations. Lecture five hours.

234-6 Avionics Laboratory II. Students will be able to identify systems components. They will be able to operate and calibrate test equipment. They will be able to troubleshoot and repair communication and navigation equipment, and to perform alignment of transceivers, navigation receivers, VOR converter, ADF receivers and marker beacon receivers. They will effectively perform modification and compliance of Service Bulletins and FAA Directives. Laboratory twelve hours.

235-6 Flight System Theory. Students will have knowledge of operation and installation of aircraft control, navigation, communication, syncro and servo systems. They will be able to determine if a system meets factory and FAA specifications. They will learn to use technical publications. Lecture six hours.
236-5 Avionics Laboratory III. Students will be able to operate, install, adjust, troubleshoot, and repair automatic pilot, automatic stabilization systems, and integrated flight systems. They will be able to install, adjust, and troubleshoot flux gage compass, gyrosyn directional indicator, rate gyros, RMI repeater and attitude gyros. They will be able to use technical publications. Laboratory ten hours.
237-5 Avionics Logic Circuits and Pulse Systems Theory. Students will be able to analyze the use and operation of logic gates, gate expanders, invertors, flip-flops, shift regestors, decade chounters and operational amplifiers as used in avionics circuits. They will have knowledge of pulse circuits used in distance measuring equipment and ATC transponders. Lecture, five hours.
238-5 Avionics Laboratory IV. Students will be able to locate, identify, troubleshoot, and repair logic circuits used in avionics equipment. They will be able to test, calibrate, troubleshoot, and repair distance measuring equipment and ATC transponders in accordance with manufacturer and FAA Repair Station Guidelines. Laboratory, ten hours.
302-3 Avionics Laboratory V. Students will be able to conduct avionics loan analysis and perform weight and balance problems. Given a malfunction in an avionic system on the aircraft, they will be able to locate the faulty component, and to perform necessary repairs and to return equipment to airworthy status. Laboratory 12 hours.
303-2 FCC Regulations. The student will have knowledge of FCC requirements for aircraft station licenses, aeronautical ground station and operator's licenses. Lecture 4 hours.
304-4 Avionics Radar System Theory. The student will have knowledge of airborne radar system circuits, and understand the theory of operations of radar antenna system. The student will be able to perform installation, system performance check out, circuit adjustment, trouble shooting, and general repair of the airborne radar system.

Biological Sciences (Major)

The biological sciences major consists of courses selected from the Departments of Botany, Microbiology, Physiology, and Zoology. Students selecting biological sciences as their major do not need to take a minor. Besides enrolling in biological sciences courses, students are also required to take courses in chemistry and mathematics. Students should consult their advisers for additional information.

Bachelor of Arts Degree, College of Science

General Education Requirements	45
Supplementary College of Science Requirements	9-11
Foreign Languages	(4) + 4
Mathematics 108 and 109 or 111 (or its equivalent) or 140, or 141	(3) + 1-3
Chemistry 222a,b	(4) + 4
Requirements for Biological Sciences	40
Physiology 210	5
Biology 305, 306, 307, 308, 309 (any two)	6
Botany 200 and 204	8
Microbiology 301, 302	7
Zoology 220 a,b	8
Biological sciences electives at 400-level	6
Electives	24-26
Total	120

Bachelor of Science Degree, College of Education

Students planning to obtain their degree in the College of Education must satisfy all the requirements of that college. The requirements in biological sciences will be the same as those in the College of Science. Those students desiring to attain a

secondary education teaching certificate must also enroll in Curriculum, Instruction, and Media 468. See Teacher Education Program, page 66.

Minor

A minor in biological sciences consists of a minimum of 24 hours and may be taken in the College of Education, the College of Liberal Arts, or the College of Science. It must include two of the following biology courses: Biology 305, 306, 307 (6 hours), plus 9 hours selected from the following courses: GE-A 312, Botany 200, 204, Microbiology 301, 302; Physiology 410a,b; and Zoology 220a,b or other courses approved by the director of the undergraduate program in Biological Sciences.The remaining nine hours may be selected from courses offered by the departments of botany, microbiology, physiology, and zoology. A student with a major in one of the life sciences may not take a minor in biological sciences.

Biology (Courses)

Courses

210-2 to 6 Biology Field Studies. A trip of from two to six weeks to acquaint students with organisms in various environments or with methods of field study, collection, and preservation. Students will incur costs for food, lodging, and transportation. Prerequisite: consent of instructor.
305-3 Genetics-Classical and Molecular. Broad principles of genetics, including Mendelism, chromosomal behavior, genetic mapping and mutation, Allelism, genes and development, polygenic systems, inbreeding and outbreeding, and genetic applications.
306-3 Cell Physiology. The basic functions of the cell are considered. The biochemical basis and mechanisms of the cellular processes, the functions of the subcellular structures, and their ramifications will be explored in the context of plant and animal cells.
307-3 Environmental Biology. Broad principles of ecology on the organismic, the population, the community, and the ecosystem level. Includes environmental factors, adaptations, energy and material balance, succession, and human ecology.
308-3 Organismic Functional Biology. Fundamental principles and biological examples of basic phenomena characteristic of organisms, including transport, integration, and reproductive systems. Detailed attention will be given to various organ systems with an emphasis on function.
309-3 Developmental Biology. Principles of development; causal mechanisms, cybernetic and phylogenetic aspects. Lecture course.
315-2 History of Biology. The interrelationships between the development of biological knowledge and the history of the human races.

Black American Studies (Minor, Courses)

Black American studies is a part of the School of Social Work

The Black American studies program will plan a program for a special major leading to the Bachelor of Science degree in the College of Human Resources. Any student interested in such a program should consult this catalog for an explanation of the special major, and then contact the academic counselor in Black American studies in order to plan and receive approval for the program.

A minor in Black American studies consists of a minimum of 20 hours which are to be selected from Black American studies course offerings and organized according to each individual student's field of interest. An official minor is subject to approval by the coordinator of Black American studies.

Courses

109-3 Introduction to Black America. A survey course designed to expose the student to various aspects of the Black experience. Aspects included are history, literature, theology, the arts, etc. The textbook is a collection of essays designed to use especially in this course and is supplemented by guest lecturers and audiovisual materials.
135-3 The Third World: The African Model. A study of the Third World through a focus

on Africa as a model; emphasis on the cultural traditions, the impact of the West, and the problems facing Third World nations today.

209-3 Critical Issues in the Black American Experience. Insights into the Black American experience. Concepts including race, ethnicity, class, caste, minorities, prejudice, discrimination will be analyzed. Main focus is on exploration of critical socio-economic, political, and cultural themes such as demographic trends; migration and urbanization, political participation and strategies, income and employment, housing, health, education, black family, black religion, law, and justice. Prerequisite: Black American Studies 109 recommended but not required.

225-3 Social Change in Africa. Examination of the interplay between tradition and modernity in an effort to understand the new Africa. Some of the forces of social change are analyzed. Other topics include African women and the family structure in change and the problems of African development.

230-3 Introduction to Black Sociology. An introductory course which focuses on the concepts of Black sociology in order to fill the gaps of "traditional sociology" pertaining to the Black experience. Designed to heighten the student's awareness of the Black identity and the sociological phenomena which affect it and acquaints the student with specific sociological problems in the study of Afro-Americans. Prerequisite: Black American Studies 109.

257-1 Black American Studies Choir. Prerequisite: consent of instructor.

311-6 (3, 3) Black American History. (Same as History 362.) **(a)** Black American History to 1865; **(b)** Black American History since 1865. The role of Blacks and contribution in the building of America and the ongoing fight for equality.

314-6 (3, 3) History of Africa. (Same as History 387a,b.) **(a)** History of Africa. A study of West African peoples from earliest times to the present; including the era of kingdoms; the role of Islam; African-European relations; colonialism; and African nationalism. **(b)** History of East-Central Africa. A study of East and Central African peoples from earliest times to the present; including migrations and kingdoms; African-Arab-European relations, colonialism, and African nationalism.

320-3 Leaders of the Black World. A study of black rulers; governmental representatives; activists; and thinkers; both past and present; in Africa; the West Indies; and the United States, with emphasis on the effects of their philosophies on the black world.

330-3 Black American Social Problems. Comparative study of the social problems which afflict black Americans and other minorities and their consequences; including crime and delinquency, mental and emotional disorders, drug addiction, housing conditions, poverty and unemployment, and labor conditions. Prerequisite: consent of instructor.

332-3 Black Americans and the Law. Focuses on the effect of the American legal system upon the Afro-American from slavery to the present; uses theory and knowledge from the law, history and sociology; will explain the historical perspectives of specific laws as well as their effect upon the Afro-American.

333-4 The Black Family. Exploring the myths and realities of the black family from sociological and psychological perspectives through a critical examination of scholarly controversies and research. Prerequisite: junior standing.

336-4 The Black Personality. Examines current areas of interest in the study of the psycho/social characteristics of Black Americans. Theoretical and empirical data will be examined. Considers critical issues as cognitive development; self-concept, socialization process and inter- and intra-group relations. Prerequisite: consent of department.

339-3 Black Americans and the Correctional Process. Analysis of selected topics: the prison community and the Black inmate; correction education and the Black inmate; and the Black professional. Prerequisite: 332.

345—3 Law and Civil Liberties. (See Political Science 332.) Elective Pass/Fail.

350-3 Contemporary Black Drama. Surveys in the works of major and minor writers of contemporary Black dramas from *A Raisin in the Sun* to *No Place to Be Somebody.* Explores recent criticism on Black theater, and approaches oral and written criticism from the point of view of "Black aesthetics." Prerequisite: English 201 or consent of department.

355-3 The Black American Novel Since *Native Son.* The Black American novel and its major themes since Richard Wright's *Native Son.* Includes such authors as Baldwin, Petry, Williams, etc. Prerequisite: English 210, English 325, junior standing, or consent of instructor.

357-3 Blacks in the Performing Arts. History of the role of blacks in the performing arts covering dance companies, ballet, folk dance and Black dramatists; cinema, in all its forms; radio and television; and music (spirituals, jazz, opera, classics, etc.) Prerequisite: English 325, or consent of department.

358-3 Black Theater Workshop. Designed to train students in the arts of the theater. While major emphasis is placed on acting techniques, opportunities for training in makeup design and oral interpretation are also provided.

362-3 The Music of Black Americans. (See Music 372.)

370-3 Bibliography of Black American Studies. An introductory survey of Black American bibliographic resources course, culminating with students' compilation of a selective, annotated bibliography covering some chosen aspect of the black experience. Prerequisite: junior or senior standing or consent of instructor.
380-2 Regional Geography of Subsaharan Africa. (See Geography 365.) Elective Pass/Fail.
385-4 Myth and Ritual in Archaic Religion. (See Religious Studies 333.) Elective Pass/Fail.
391-2 Social Services and Minority Groups. (See Social Work 391.)
395-3 Investigative Procedures and Techniques for the Affirmative Action Officer. Designed to provide students with the basic skill of investigating equal employment opportunities and affirmative action complaints that might be filed by one who feels discriminated against in the hiring process and upward mobility within an agency. Study and research of existing cases filed with FEPC and EEOC.
399-3 to 5 Independent Study in Black American Studies. Independent study which examines problems and issues not covered in a specific course. Hours and subject matter decided during consultation with a faculty member. Prerequisite: consent of instructor. Elective Pass/Fail.
430-3 Black Political Socialization. Definitive approach to how people learn about politics focusing on Blacks because of their unique experience; i.e., prolonged minority group status. Research oriented, in that, it takes an explanative and predictive approach to produce models of political learning. Not for graduate credit. Prerequisite: 230, junior or senior standing, or consent of department.
445-3 Ascriptive Politics: Gender, Race, Ethnicity. (See Political Science 451.) Not for graduate credit. Elective Pass/Fail.
455-2 to 12 Rehabilitation Services with Special Populations.
465-3 Governments and Politics of Sub-Saharan Africa. (See Political Science 465.) Elective Pass/Fail.
475-3 Sociological Effects on Black Education. A teacher-oriented course dealing with up-to-date research in Black and minority education. The instructor utilizes the findings of current periodicals to present models for understanding and communicating with Black children. Not for graduate credit. Prerequisite: Education 303 or consent of department.
480-4 to 8 (4, 4) Seminar in Black Studies. Analysis of the black experience directed toward practical contribution in the area studied. Topics vary with instructor. May be repeated once for a total of eight credits provided registrations cover different topics. Topics announced in advance. Prerequisite: Black American Studies 109 or consent of department.
490-1 to 3 Cross-Cultural Rehabilitation. (See Rehabilitation 419.) Not for graduate credit.
499-1 to 5 Special Readings in Black American Studies. Supervised readings for students with sufficient background. Registration by special permission only. Offered on demand. Prerequisite: consent of instructor.

Botany (Department, Major, Courses)

Botany is a broad science that includes many specialties. A major in botany should be considered by those wishing to specialize in teaching and/or research in the plant sciences and related fields.

Students planning to major in botany should consult with the chairperson of the department for information concerning the programs in the department.

As a general rule, students who intend to apply for admission to a graduate school to study for an advanced degree in botany should include the following in their undergraduate program: inorganic and organic chemistry, mathematics through calculus, a modern European language, and as many botany and biology courses as time and scheduling will permit.

An honors program is available to those juniors and seniors in botany who have an overall grade point average of 3.00 or better and an average in botany courses of 3.25 or better. Honors students should enroll in Botany 492 during some semester in both junior and senior years.

Bachelor of Arts Degree, College of Science

General Education Requirements . . . . . 45[1]
Supplementary College of Science Requirements 7-9
Foreign Language . . . . . (4) + 4

Mathematics 108 and 109 or 111 (or its equivalent), or 140	(3) + 1-3
Physical Sciences (Not General Education)	(4) + 2
Requirements for Major in Botany	43-49[2]
Biology 305, 307	6
Botany 200, 204, 304, 320, 335, 337	19
Botany electives (to be selected from Botany offerings excluding Botany 160, 257, 258, 259, 462, 490, 491; and may include up to a total of 6 hours selected from Botany 390, 391, and 492)	16
Chemistry	(6) + 2-8[3]
Option A: Chemistry 140a,b	
Option B: Chemistry 222 a,b, 340, 341	
Electives	17-25
Total	120

[1]The 45-hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Botany requirements satisfy the biological and physical sciences requirements for the College of Science and may be substituted for a maximum of 12 hours in General Education.
[3]Option B is recommended for those interested in plant physiology or graduate study.

Bachelor of Science Degree, College of Education

Students planning to obtain their degree in the College of Education must satisfy all the requirements of that college. The requirements in botany must total 32 semester hours, including Botany 200 and 204. Those students desiring to attain a secondary education teaching certificate must also enroll in Curriculum, Instruction, and Media 468. See Teacher Education Program, page 66.

Minor

A minor in botany consists of a minimum of 16 semester hours, selected from any botany offerings except 160, 257, 258, 259, 390, 391, 462, 490, 491, or 492.

Courses

For all field courses in botany, students will be assessed a transportation fee. In addition, certain courses may require the purchase of additional materials and supplies, generally $1 to $5 in total cost.

160-3 Integrated Science — A Process Approach. An interdisciplinary science course stressing processes of science; observing, classifying, using numbers, measuring, using space-time relationships, communicating, predicting, inferring, defining operationally, formulating hypotheses, interpreting data, controlling variables,, and experimenting.

200-4 General Botany. An introduction to botany. Emphasis is placed on structure and development and associated physiological phenomena. Consideration also is given to basic aspects of plant genetics, classification, evolution, ecology, and conservation. Three lectures and one 2-hour laboratory per week.

204-4 Plant Diversity. An evolutionary approach to the study of major plant groups — algae to flowering plants. Emphasis will be placed on cytology, anatomy, and development. Economic and ecological aspects of various groups as they relate to humans will also be considered. Laboratory will stress principles via hands-on study of selected representatives. Three lectures and one 2-hour laboratory per week. Prerequisite: 200 or consent of instructor.

257-2 to 8 Concurrent Work Experience Credit. Practical experience in a laboratory or other work directly related to course work in the botany program and to the student's educational objectives may be used as a basis for granting credit in botany. Credit for ongoing work experience must be arranged prior to registration, is sought by petition to the department chairperson via the departmental undergraduate adviser, and requires the approval of the department chairperson, the executive officer of the student's major program if other than botany, and the dean of the College of Science. Mandatory Pass/Fail.

258-2 to 8 Previous Work Experience Credit. Practical experience in a laboratory or other work directly related to course work in the botany program and to the student's educational objectives may be used as a basis for granting credit in botany. Credit for past work experience is sought by petition to the department chairperson via the departmental

undergraduate adviser and requires approval of the department chairperson, the executive officer of the student's major program if other than botany, and the dean of the College of Science. No grade for past work experience.

259-2 to 8 Vocational Education Credit. Formal, post-secondary educational credit earned in a military service or other vocational technical or occupational program and directly related to the student's educational objectives may be used as a basis for granting credit in botany. Credit is sought by petition to the department chairperson via the departmental undergraduate adviser and requires approval of the department chairperson, the executive officer of the student's major program if other than botany, and the dean of the College of Science.

304-3 Plant Classification. Identification of local flora by use of various manuals. Survey of taxonomy and nomenclature. Every semester. Prerequisite: 200 or equivalent.

308-3 Taxonomy of Cultivated Plants. Identification of woody and herbaceous cultivated plants and discussion of their use as ornamentals. Prerequisite: consent of instructor.

320-4 Elements of Plant Physiology. The functions of plants and their relation to the various organs. Two lectures and four laboratory hours per week. Every semester. Prerequisite: 200; organic chemistry or a minor in chemistry.

335-2 Methods in Genetics. Selected organisms and techniques illustrating genetic principle. Two two-hour laboratories per week. Prerequisite: Biology 305 or equivalent.

337-2 Ecology Laboratory. Techniques in vegetation analysis and environmental measurements. One four-hour laboratory per week. Prerequisite: Biology 307 or equivalent.

356-4 Plant Pathology. A study of the nature and control of plant diseases. Fungal and bacterial diseases are stressed. Field crop diseases are emphasized. Two lectures and two laboratories per week. Prerequisite: 200 or equivalent; 320 recommended.

357-3 Introductory Forest Pathology. A study of the nature and control of tree diseases in forests, nurseries, parks, and streets. Fungal and bacterial diseases are stressed. Two lectures and one laboratory per week. Prerequisite: 200 or equivalent; 320 recommended.

390-1 to 3 Readings in Botany. Individually assigned readings in botanical literature. Every semester. Prerequisite: consent of departmental chairperson.

391-1 to 4 Special Problems in Botany. Individual laboratory or field work under supervised direction: **(a)** anatomy, **(b)** bryology, **(c)** ecology, **(d)** morphology, **(e)** mycology, **(f)** paleobotany, **(g)** pathology, **(h)** photography, **(i)** phycology, **(j)** physiology, **(k)** systematics. Every semester. Prerequisite: consent of departmental chairperson.

400-4 Plant Anatomy. An introduction to cell division, development, and maturation of the structures of the vascular plants. Laboratory. Prerequisite: 200 or consent of instructor.

404-4 The Algae. A phylogenetic approach to the study of algae with emphasis on comparative cytology, morphology, and ecology. Laboratories include a detailed survey of freshwater algae and a general treatment of representative marine forms. Two lectures and two two-hour laboratories per week. Prerequisite: 204 or consent of instructor.

405-4 The Fungi. A survey of the fungi — their structure, development, relationships, ecological roles, and economic importance. Two lectures and two laboratories. Prerequisite: 204 or equivalent.

406-3 Bryology. Structure, development, and relationships of the liverworts, hornworts, and mosses. Two lectures and one laboratory per week. Prerequisite: 204 or equivalent.

409-3 Field Mycology. The taxonomy, ecology, and distribution of fungi in southern Illinois and environs with emphasis on techniques of specimen collection, preservation, identification, and recognition. Prerequisite: 200; 204 recommended.

410-3 Taxonomy and Ecology of Bryophytes and Lichens. Floristic studies of the moss, liverwort, hornwort, and lichen communities of southern Illinois. Prerequisite: 200 or equivalent, or consent of instructor.

411-3 Morphology of Ferns and Fern Allies. The study of external form, internal structure, and relationships of ferns and fern allies. Two lectures and one laboratory per week Prerequisite: 204; 400 recommended.

412-3 Morphology of Gymnosperms. The study of external form, internal structure, and relationships of gymnosperms. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.

413-3 Morphology of Angiosperms. The study of external form, internal structure, and relationships of the flowering plants. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.

414-3 Paleobotany. (Same as Geology 414) The study of external form, internal structure, and relationships of plant fossils. Two lectures and one laboratory per week. Prerequisite: 204; 400 recommended.

421-4 Botanical Microtechnique. Introduction to practical methods of preservation and preparation of plant materials for laboratory and microscopic study. Paraffin and plastic embedding and sectioning techniques, and use of general and histochemical stains stressed. Includes chromosome squashing, whole-mount preparation, photomicrography, and other techniques. One lecture and three laboratories per week. Prerequisite: 200 or equivalent.

425-10 (5, 5) Advanced Plant Physiology. **(a)** Intermediary plant metabolism. Characteri-

zation of the photosynthetic and metabolic pathways of biosynthesis and degradation of organic constituents; role of environmental regulants of plant metabolism. (b) Physics of plants; membrane phenomena; water relations; mineral nutrition. Prerequisite: 320 and consent of instructor.

430-3 Economic Botany. Classification, evolution, domestication, and botanical characteristics of plants useful to people. Every year. Prerequisite: 200 or equivalent.

439-2 Natural Areas and Rare and Endangered Species. Evaluation of the natural area preservation concept with emphasis on how to detect natural areas and methods to preserve them. Emphasis on the rare and endangered species program, its significance, and its methodology. Prerequisite: 304, Biology 307.

440-3 Grassland Ecology. A study of grassland structure and function in relation to various biotic and abiotic factors. Cost of field trips ($5) and textbooks must be incurred by the student. Prerequisite: 304 and Biology 307 or equivalent.

443-4 Forest Ecology and Reclamation. Soil, climatic, and genetic factors affecting tree distribution and growth in disturbed and natural habitats. Saturday field trips. Prerequisite: 307 or equivalent.

444-4 Analysis and Classification of Vegetation. Includes concepts and analytical methods pertaining to plant community energetics, nutrient dynamics, succession, vegetation classification and niche theory. Laboratory will include the application of these concepts and methods to field situations. Cost of textbooks and travel fee ($15) must be incurred by the student. Prerequisite: Biology 307 or equivalent.

446-4 Tropical Ecology. Two weeks of marine ecology on the atolls and extensive barrier reef off the coast of Belize, British Honduras, and two weeks of terrestrial ecology at several locations inland. Cost varies yearly. Summer. Prerequisite: advanced undergraduate or graduate standing in one of biological sciences, and concurrent enrollment in Zoology 446.

447-2 to 6 Field Studies in Latin America. Two to six weeks of intensive field work to acquaint students with the flora and vegetation in various environments of Latin America and with ecological and taxonomic field techniques. Cost varies with type of study and location. Transportation cost: $80. Prerequisite: advanced standing in one of the biological sciences and consent of instructor.

448-3 to 8 Field Studies in the Western United States. Three to six weeks of intensive field work designed to acquaint students with the flora, vegetation, and environments of the Rocky Mountains and adjacent areas. Both ecological and taxonomic field methods are emphasized. Transportation cost ($100), travel expenses, and textbooks must be incurred by the student. Prerequisite: 304, Biology 307 or equivalents, and consent of instructor.

449-2 Elements of Taxonomy. Principles of taxonomy including historical sketch, phyletic concepts, classical and experimental methods. One lecture and three laboratory hours per week. Prerequisite: 304 or equivalent, or consent of instructor.

450-2 Plant Geography. World distribution of plants related to environmental, floristic, and historical factors. Prerequisite: interest in biology.

451-4 Upland Flora. The taxonomy, ecology, and distribution of the natural vegetation in and around upland habitats of the Mississippi Basin. Prerequisite: 304 or consent of instructor.

456-2 Advanced Plant Pathology. A study of the changes occurring in host and pathogen at the host-parasite interface before, during, and after penetration. Control measures will be discussed and emphasis will be on midwest field crops. Two lectures per week. Prerequisite: 356 or consent of instructor.

457-2 Advanced Forest Pathology. A survey of recent literature on major forest diseases with emphasis on host-parasite interactions and disease control. Students will develop detailed literature reviews on selected pathology problems and design experiments for solving these problems. Two lectures per week. Prerequisite: 357 or consent of instructor.

460-3 Application of Statistical Techniques in Botanical Research. Techniques of data handling and graphical representation, use of statistical tests, design of experiments and interpretation of results, and preparation of science papers. Students will choose individualized projects in the greenhouse, laboratory, field, computing center, or library. Two lectures per week plus conferences on projects. Prerequisite: ten hours in botany or equivalent.

462-4 Science Process and Concepts for Teachers of Grades N-8. (Same as Curriculum, Instruction, and Media 427.) Specifically designed to develop those cognitive processes and concepts needed by elementary teachers in the teaching of modern science programs. Lecture three hours per week, laboratory two hours per week. One or two additional field trips required.

484-3 Palynology. (See Geology 484.)

485-2 Botanical Literature. A survey of the major classical and modern writings in the botanical sciences. This includes a consideration of the primary subdivisions; systematics, structure, physiology, genetics, and ecology. In addition, periodicals will be treated. Prerequisite: consent of instructor.

490-3 Photographic Methods in Scientific and Biological Photography. Black and white and color. Specimen photography, macrophotography. Slides for presentation, materials and methods used in scientific publications. Prerequisite: consent of instructor.
491-3 Scientific Illustration. Materials and methods used in illustrating scientific publications including two-dimensional graphs, maps, lettering, and line drawings. Three dimensional techniques will also be covered. Prerequisite: consent of instructor.
492-2 to 6 Honors in Botany. Individual research problems available to qualified juniors and seniors. Prerequisite: consent of department chairperson.
500-3 Advanced Plant Anatomy.
503-10 (5, 5) Advanced Angiosperm Taxonomy.
524-2 Advanced Plant Genetics.
525-3 Cytology.
526-4 Cytogenetics.
532-3 Embryogenesis and Organography of Plants.
533-3 Plant Growth and Morphogenesis.
534-2 Techniques in Studies of Plant Growth and Development.
535-2 Energetics of Aquatic Ecosystems.
542-2 Biosystematics.
543-2 Tree Growth.
551-3 Upland Flora.
552-3 Lowland Flora.
570-2 to 3 Graduate Readings in Botany.
580-1 to 6 (1 per semester) Seminar.
584-3 Advanced Palynology.
585-2 to 6 (2 per semester) Advanced Topics in Systematics.
589-1 to 12 (1 per topic per semester) Seminars in Botany.
590-1 to 3 Introduction to Research.
591-2 to 9 Research.
599-2 to 9 Thesis.
600-1 to 36 (1 to 12 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Business Administration (Major [Graduate only], Courses)

The graduate faculty in business administration, consisting of members of the departments of Accountancy, Administrative Sciences, Finance, and Marketing of the College of Business and Administration, offers graduate work leading to the Master of Business Administration degree. The MBA program has as its objective the development of professional managers and executives to serve the needs of business and government and to prepare interested graduates for doctoral study. The program has been structured with flexibility so as to serve holders of baccalaureate degrees in business administration as well as those who hold degrees in other disciplines. For a more complete description of the program, refer to the Graduate Catalog.

Courses

410-3 Financial Accounting Concepts. (Same as Accounting 521). Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset, liability, and equity valuations; and income determination is stressed. Prerequisite: Enrollment in MBA program or consent of department.
430-3 Business Finance. An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Prerequisite: enrollment in MBA program or consent of instructor.
440-3 The Management Process. Analysis of management theories and the administrative process. Specific managerial activities are analyzed and discussed. Functional relationships in administered organizations are explored. Prerequisite: enrollment in MBA program or consent of instructor.
450-3 Introduction to Marketing Concepts. An overview of the role of marketing within an economic system and of the major marketing activities and decisions within an organization. Emphasis is on developing an understanding of the marketing process. Prerequisite: enrollment in MBA program or consent of department.
451-3 Methods of Quantitative Analysis. (See Mathematics 457.)
452-3 Operations Research. A survey of operations research techniques with emphasis on

problem formulation, model building, and model solution. Topics include mathematical programming, waiting-line models, simulation, and design theory. Prerequisite: enrollment in MBA program or consent of department.
470-3 Legal and Social Environment. An overview of the legal, social, and ethical dimensions which influence business with particular attention to the role of law as a control factor of society in the business world. Prerequisite: enrollment in MBA program or consent of department.
500-3 Research Applications in Business and Organizations.
502-3 Business in Our Capitalistic Society.
510-3 Managerial Accounting and Control Concepts.
511-3 Accounting Theory.
512-3 Auditing Concepts.
513-3 Accounting Concepts in Business Organizations.
514-3 Controllership.
515-3 Accounting Information System Concepts.
516-3 Tax Concepts.
519-3 Seminar in Accounting.
520-3 Production/Operations Management.
521-3 Business Conditions Analysis.
526-3 Managerial Economics.
530-3 Financial Management.
531-3 Advanced Financial Management.
532-3 Financial Institutions and Markets.
533-3 Investment Concepts.
534-3 Financial Decision Making.
536-3 Advanced Financial Analysis.
539-3 Seminar in Finance.
540-3 Managerial and Organization Behavior.
541-3 Operations Research II.
543-3 Personnel Management.
544-3 Advanced Production Planning and Inventory Management.
545-3 Organization of Complex Systems.
546-3 Leadership and Managerial Behavior.
549-3 Seminar in Administration.
550-3 Marketing Management.
551-3 Product Strategy and Management.
552-3 Advanced Marketing Research and Analysis.
555-3 Consumer Behavior.
556-3 Marketing Strategy for Organizations.
558-3 Promotional Theory and Strategy.
559-3 Seminar in Marketing.
560-3 Management Information Systems.
571-3 Mission and Domain Analysis.
572-3 Forecasting and Decision-Making Models.
573-3 Planning Systems and Strategic Decisions.
574-3 Advanced Research Methods in Business Administration.
580-3 International Business Operations.
591-3 Independent Study.
598-3 Business Policies.
599-3 to 6 Thesis.
600-1 to 24 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Business and Administration (Major)

The Bachelor of Science degree program with a major in business and administration is a college-wide degree which is intended for those students with personal and professional goals which cannot be met by one of the existing majors, i.e., accounting, administrative sciences, business economics, finance, or marketing, available in the college and in addition have an interest in subject areas offered in other schools and colleges of the University. The program requires students to combine interests — business with an outside field — into a unique program. For example, a student with international business interest can combine business and administration with foreign languages; a student interested in going into the

restaurant business can combine course work in food and nutrition with business and administration. The outside field, or secondary concentration, would have to be consistent with a specific career objective or personal development plan and at least 15 semester hours must be structured to achieve this objective. Individual programs would be subject to the approval of the dean of the College of Business and Administration.

Bachelor of Science Degree, College of Business and Administration

General Education Requirements	45
Professional Business Core (See page 63)	40-41
Requirements for Major in Business and Administration	15-23
Secondary concentration approved by the dean	
Electives	11-20
Total	120

Business Economics (Major)

The business economics major offered through the College of Business and Administration emphasizes the application of economic concepts and the use of critical analysis to the solution of economic and managerial problems.

This undergraduate program is an excellent general preparation for future managerial and staff assignments in a variety of business and public organizations. The program also prepares students for graduate study in economics as well as for the Master of Business Administration (MBA) degree.

Those students who desire professional careers as business and managerial economists are advised to plan to complete one to four years of postgraduate study.

Bachelor of Science Degree, College of Business and Administration

General Education Requirements	45
Professional Business Core (See page 63)	40-41
Requirements for Major in Business Economics	15-18
Economics 315, 340, 341	9
Finance 474 or 475	(3)[1]
Three courses from the following list, two of which must be in economics	6-9
Economics 310, 330, 329, 436, 443, 465, 467	
Accounting 331, 341, 471	
Administrative Sciences 345, 352, 361	
Finance 323, 325, 480	
Marketing 341, 390, 435	
Electives	16-20
Total	120

[1]Hours shown in parentheses are already included in total of hours shown for professional business core.

Business Education

(SEE VOCATIONAL EDUCATION STUDIES)

Career Development

(SEE ADVANCED TECHNICAL STUDIES)

Chemistry and Biochemistry (Department, Major [Chemistry], Courses)

The Department of Chemistry and Biochemistry offers three degree programs with a major in chemistry. The first is the Bachelor of Science degree in the College of Science. This degree is for those who wish to prepare for graduate study in chemistry or who will become professional chemists. Students completing this degree program will be certified by the American Chemical Society.

The second is the Bachelor of Arts degree in the College of Science. This program is designed primarily for students who wish to complete a major in chemistry, but who plan to eventually go into other professional areas such as medicine, dentistry, or business.

The third program of study leads to the Bachelor of Science degree in the College of Education. This degree program is administered by the College of Education. It is provided for those students who wish to become secondary school chemistry teachers.

Among the new professions which have arisen because of the increasing complexity and interdisciplinary nature of scientific and technological problem solving is that made up of chemists whose interests are in management, marketing, and production rather than research and development. Students who recognize an early interest in a combined chemistry and business career can plan their programs around the Administration Option. This is a cooperative program between the Department of Chemistry and Biochemistry and the College of Business and Administration. For further information contact the department chairperson or undergraduate adviser.

Candidates for admission to degree programs are required to have a 2.0 grade point average in chemistry courses. However, students with grade point averages in chemistry courses below 2.25 can expect to have difficulty in advanced courses.

A knowledge of German and of computer programming is recommended for all majors in chemistry.

Students taking a laboratory course will be required to purchase a notebook or a laboratory exercise book costing from $1.50 to $8.50. All students enrolled in a chemistry class that includes a laboratory session will be assessed a breakage charge for all glassware broken. The amount assessed will be based on actual replacement costs.

Bachelor of Science Degree, College of Science

CERTIFIED BY THE AMERICAN CHEMICAL SOCIETY

General Education Requirements	45[1]
Supplementary College of Science Requirements	6-7
Foreign Language (German)	(4) + 4
Mathematics 108 and109 or 111	(3) + 2-3
Biological Sciences (not general education)	(6)[1]
Requirements for Major in Chemistry	64
Chemistry 222a,b; 226, 344 and 345; 346 and 349; 462a, b; 434; 411; and 490. In addition, two courses from among 436; 446; 450 (451a,b may be substituted for 450 but will count as only one course); 455; but at least one must be from among 436, 446, 450 (with laboratory). The total hours must be at least 48	(3) + 46
Mathematics 150, 250, 251, 305	14

Physics 205a,b and 255a,b	(4) + 4
German 126a,b	(8)[2]
Electives	4-5
Total	120

[1]The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Russian or French may be substituted with departmental permission.

Bachelor of Arts Degree, College of Science

General Education Requirements	45[1]
Supplementary College of Science Requirements	6-7
Foreign Language	(4) + 4
Mathematics 108 and 109 or 111	(3) + 2-3
Biological Sciences (not general education)	(6)[1]
Requirements for Major in Chemistry	53-57
Chemistry 222a,b; 226; 344 and 345 plus 346 and 349; either 462a,b or 460; 434; plus additional courses to give a minimum of 34 hours	34-38
Mathematics 150, 250, and 251 or 305 (251 is prerequisite to Chemistry 462a,b)	11
Physics 205a,b and 255a,b[2]	8
Electives	11-16
Total	120

[1]The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Certain other courses may be substituted with permission of the department.

Bachelor of Science Degree, College of Education

General Education Requirements	45[1]
Requirements for Major in Chemistry	42-48[2]
Chemistry 222a,b; 226; 344 and 345 plus 346 and 349; 462a,b or 460	(4) + 24-30
Mathematics 111 or 108 and 109, 150, 250 and 251 or 305 recommended (251 is prerequisite to Chemistry 462a,b)	(3) + 13
Physics 203a,b and 253a,b or 205a,b and 255a,b	(3) + 5
Modern foreign language recommended	
Professional Education Requirements	28
See Teacher Education Program, page 66. Secondary education majors must take a special methods course. Curriculum, Instruction and Media 468 fulfills this requirement.	
Electives	0-7
Total	120

[1]Refer to Professional Education Experience for General Education courses which may be required.
[2]Chemistry majors must complete a minor in mathematics. Students wishing to qualify for teaching mathematics in the secondary schools should take, in addition, Mathematics 311, or 319 and 319e, or 352 and 352e.

Minor

The minor in chemistry requires a minimum of 16 semester hours including 222a,b. Elective courses must be selected with at least one course in each of two different areas of chemistry. Recommended courses are 226, 340 and 341, 460.

Courses

115-3 Introductory General Chemistry. A preparation for 222a for students without a

year of high school chemistry or for those who feel their background is inadequate. The course concentrates only on those skills immediately necessary to begin work in 222a. It does not serve as a one-semester course in chemistry that can substitute for 140a or GE-A 106. Prerequisite: one year of high school algebra or the equivalent.

140-8 (4,4) Chemistry. A two-semester course of general, organic, and biological chemistry designed to meet the needs of students of nursing, dental hygiene, physical therapy, other allied health programs, agriculture, forestry, home economics and other majors with comparable requirements. This course does not satisfy prerequisite requirements for other courses offered by the Department of Chemistry and Biochemistry. It is not applicable to a major or minor in chemistry. Three lectures and one three-hour laboratory per week. Must be taken in a,b sequence.

222-8 (4,4) Introduction to Chemical Principles. For students majoring in scientific, preprofessional, engineering, or technological programs. Atomic structure, molecular structure and bonding, stoichiometry, properties of gases, liquids and solids, thermodynamics and kinetics, chemical equilibria, pH, electrochemistry. Two lectures, one laboratory-lecture recitation, and one three-hour laboratory per week. Must be taken in a,b sequence. The student will need a calculator with log and inverse log capability (base 10 or base e). Prerequisite: one year of high school chemistry; or 115; two year of high school algebra or concurrent enrollment in GE-D 107

222C-3 Introduction to Chemical Principles. Students in the College of Engineering and Technology may take 222c instead of 222b. The three lectures per week are the same as for 222b but there is no laboratory work for 222c. This course, 222c, cannot be used to satisfy a 222b prerequisite. The student will need a calculator with log and inverse log (base 10 or e) capability. Prerequisite: 222a and registration as an engineering major.

226-5 Introduction to Quantitative Chemical Principles. Introduction to quantitative chemical determinations. Two lectures, one laboratory-lecture recitation, and two three-hour laboratories per week. A reasonable knowledge of logarithms and algebra is assumed. The student will need a calculator with log and inverse log capability (base 10 or base e). Prerequisite: 222b. Elective Pass/Fail.

340-4 Survey of Organic Chemistry. A basic survey course of organic chemistry. This course does not satisfy the prerequisite requirement for Chemistry 450 or 451. Four lectures per week. Prerequisite: 222b. Concurrent enrollment in 341 is recommended.

341-2 Organic Chemistry Laboratory. One three-hour laboratory and one laboratory-lecture per week. Prerequisite: 222b. Concurrent enrollment in 340 is recommended.

344-4 Organic Chemistry. A fundamental introduction to the chemistry of carbon compounds designed for chemistry, and other science majors; premed and predental students, engineers, and others ultimately requiring a year of organic chemistry. Four lectures per week. Prerequisite: 222b. Concurrent enrollment in 345 is recommended.

345-2 Laboratory Techniques. Physical techniques and reactions of inorganic and organic compounds. One three-hour laboratory and one laboratory-lecture per week. Prerequisite: 222b. Concurrent enrollment in 344 is recommended.

346-2 Organic Chemistry. The organic chemistry of compounds of biological interest with emphasis on the mechanistic, structural, and stereochemical approach to organic chemistry. Two lectures per week. Prerequisite: 344 and 345. Concurrent enrollment in 347 or 349 is recommended.

347-3 Laboratory Techniques. A laboratory course for preprofessionals and those wanting a minor in chemistry. Synthesis and reactions of compounds of biological interest. One laboratory-lecture and two three-hour laboratories per week. Prerequisite: 344 and 345. Concurrent enrollment in 346 is recommended.

349-3 Laboratory Techniques. A laboratory course for chemistry majors. Synthesis and structural identification of inorganic and organic compounds, with emphasis on instrumental procedures. One laboratory-lecture and two three-hour laboratories per week. Prerequisite: 344 and 345. Concurrent enrollment in 346 is recommended.

375-1 to 2 Undergraduate Seminar. For juniors and seniors with a major in chemistry. Prerequisite: consent of the department chairperson.

396-4 (2, 2) Chemical Problems. Chemical investigations under the direction and supervision of a faculty member. Prerequisite: consent of instructor and four semesters of chemistry laboratory.

411-3 Intermediate Inorganic Chemistry. Fundamentals of inorganic chemistry, covering bonding and structure, coordination compounds, and the chemistry of some familiar and less familiar elements. Three lectures per week. Prerequisite: 460 or 462a or concurrent enrollment in either.

416-3 X-Ray Crystallography. (See Geology 416.) Prerequisite: 222b, one year of college physics and Mathematics 150.

431-4 Environmental Analytical Chemistry. Practical applications of common instrumental and wet methods to the determinations of chemical substances in common natural and commercial materials. Techniques will include titrimetry; quantitative transfer of liquids and solids; gas, thin-layer and ion-exchange chromatography; atomic absorption; flame photometry; ion selective electrode potentiometry; and spectrophotometry. The course is intended for senior-level and graduate students in disciplines other than chemistry who

desire to know the practical aspects of laboratory measurements. The course is not applicable to a major in chemistry. One lecture, one laboratory-lecture, and two three-hour laboratories per week. Prerequisite: 222a,b or nine hours of chemistry excluding general education courses. Elective Pass/Fail.

434-4 Instrumental Analytical Chemistry. Theory and practice of modern instrumental measurements, including emission and absorption spectroscopic, electroanalytical, and chromatographic methods, and an introduction to applied electronics. Two lectures and two three-hour laboratories per week. Prerequisite: one semester of physical chemistry or concurrent enrollment in 462a or 460.

436-3 Analytical Separations and Analyses. A study of the analyses of complex materials, usually inorganic, with emphasis on separations, functional-group chemical analyses, and instrumental applications. Two lectures and one three-hour laboratory per week. Prerequisite: 226 and one semester of physical chemistry which may be taken concurrently.

444-3 Intermediate Organic Chemistry. Intended for incoming graduate students and advanced preprofessional students. Provides students with intermediate level coverage of organic reactions, mechanisms, syntheses, and structure determination. Emphasis will be placed on problem solving, including structure elucidation, road map sequences, multistep synthetic sequences, and elucidation of reaction mechanisms including those with stereochemistry and multiple sites of reactivity. Prerequisite: 344, 346, or equivalent and consent of instructor.

446-4 Qualitative Organic Analysis. A systematic study of the separation and identification of organic compounds. Two lecture and six hours of laboratory per week. Prerequisite: 226 and either 346 and 349 or consent of instructor.

450-3 or 4 Survey of Biochemistry. Chemistry, function, and metabolism of amino acids, proteins, enzymes, carbohydrates, lipids, and nucleic acids. For students desiring a terminal, one-semester survey of biochemistry. Three lectures per week for 3 credits. Students desiring laboratory experience register for 4 credit hours in an appropriate laboratory section; one laboratory per week. Prerequisite: 346 and biological science.

451-6 (3, 3) Biochemistry. **(a)** Chemistry and function of amino acids, proteins, and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. **(b)** Chemistry, function and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Must be taken in a,b sequence. Prerequisite: one year of organic chemistry.

455-4 Biochemistry Laboratory. Modern biochemical laboratory techniques for isolation, purification, and characterization of constituents of living cells and for investigations of pathways, kinetics, energetics, and regulatory mechanisms related to metabolism and enzymic activity. One lecture and eight hours of laboratory per week. Prerequisite: 451a and 226 or concurrent enrollment; graduate standing in the Department of Chemistry and Biochemistry or consent of the instructor.

460-4 or 5 Principles of Physical Chemistry. A one-semester course in physical chemistry designed especially for non-chemistry majors. Not for those who intend to be professional chemists. Chemistry majors taking 460 instead of 462 a,b must take the laboratory. Nonchemistry majors may take the course for 4 credit and omit the laboratory. Four lectures and one three-hour laboratory per week. Prerequisite: 222a,b Mathematics 150 or 140 or 141; Chemistry 226 for the laboratory option. Elective Pass/Fail.

462-10 (5, 5) Physical Chemistry. Four lectures and one three-hour laboratory per week. **(a)** Classical thermodynamics and its applications, statistical thermodynamics, and chemical kinetics. **(b)** Quantum mechanics of atoms and molecules, molecular spectroscopy. The laboratory work includes the analysis of data, computational techniques, and typical chemical measurements. Prerequisite: **(a)** 226, Mathematics 251; **(b)** 462a, Mathematics 305 recommended. Must be taken in a,b sequence.

471-2 Industrial Chemistry. A survey of modern industrial chemistry and an introduction to chemical research processes. Two lectures per week. Prerequisite: 346 and 347 or 349.

489-1 to 3 Special Topics in Chemistry. Prerequisite: consent of instructor and of chairperson.

490-2 Chemical Literature. A description of the various sources of chemical information and the techniques for carrying out literature searches. Two lectures per week. Prerequisite: 346 and 347 or 349.

491-2 History of Chemistry. The evolution of chemistry from ancient times until 1920. Two lectures per week. Elective Pass/Fail.

496-1 to 8 Undergraduate Research (Honors). Introduction to independent research under the direction of a faculty member culminating in a written report. Not for graduate credit. Prerequisite: a 3.0 grade point average, five semesters of chemistry laboratory including one semester of physical chemistry, consent of instructor and department chairperson.

502-2 Molecular Orbital Theory.

511-6 (3, 3) Advanced Inorganic Chemistry.

519-2 to 9 (2 to 3 per semester) Advanced Topics in Inorganic Chemistry.
531-3 Theory of Chemical Analysis.
532-3 Analytical Chemistry Instrumentation.
535-3 Advanced Analytical Chemistry.
539-2 to 9 (2 to 3 per semester) Advanced Topics in Analytical Chemistry.
541-3 Organic Structure and Reactivity.
542-3 Mechanistic Organic Chemistry.
543-3 Synthetic Organic Chemistry.
549-1 to 9 (1 to 3 per semester) Advanced Topics in Organic Chemistry.
556-1 to 7 Advanced Biochemistry.
559-1 to 12 (1 to 3 per semester) Selected Topics in Biochemistry.
560-3 Introduction to Quantum Chemistry.
562-6 (3, 3) Advanced Molecular Spectroscopy.
564-3 Statistical Thermodynamics.
565-3 Group Theory.
569-2 to 9 (2 to 3 per semester) Advanced Topics in Physical Chemistry.
594-2 or 3 Special Readings in Chemistry.
595-1 Advanced Seminar in Chemistry.
597-1 to 15 Professional Training.
598-1 to 50 (1 to 12 per semester) Research.
599-1 to 6 Thesis.
600-1 to 30 (1 to 12 per semester) Dissertation — Doctoral.
601-1 to 12 per semester Continuing Research.

Child and Family

(SEE CURRICULUM, INSTRUCTION AND MEDIA)

Cinema and Photography (Department, Major, Courses)

The major in cinema and photography provides undergraduate students with experience and background in the history, theory, and practice of cinematic and photographic communication and expression. The program is structured to make available a foundation for professional, fine arts, and educational careers in cinema and photography; to explore the social, critical, and ideological implications of still and motion pictures; and to provide opportunities for study of and experimentation with both cinema and photography as media for communication and personal expression.

The major requires a minimum of 38 hours in cinema and photography coursework, including the required courses in the department. Students may tailor coursework selection to meet specific areas of emphasis: cinema production, cinema studies, fine arts photography, professional photography, photojournalism.

Students are urged to declare their major and areas of emphasis as soon as possible. To be admitted to the major, a student must have a grade point average of *C* or better. In order to remain in the major, each student must maintain an overall grade point average of at least a *C* and at least a *C* average for all cinema and photography coursework. Grades below *C* in cinema and photography courses will not be accepted as fulfilling minimum major requirements. Cinema and photography courses in which students have received grades of *D, F, AU,* or *INC* may not be used to satisfy prerequisite requirements for other cinema and photography courses. Coursework in cinema and photography is not available to majors on a Pass/Fail basis, unless designated as mandatory Pass/Fail.

Courses in cinema and photography have limited enrollment, especially advanced courses. Not all courses are offered each semester. Admission to certain cinema and photography courses is restricted, and permission must be obtained prior to registration. Permission to register for some courses is based upon submission of photographic portfolios or films. Students are encouraged to plan their

course scheduling well in advance to ensure necessary prerequisites and fulfillment of major requirements.

Students may design their own programs of study within the requirements for graduation. The department recommends that students choose an area of emphasis to give a sense of direction to their studies. Students interested in cinema production are encouraged to enroll in 355, 356, 360, 368, 452, 455 and 456 or 499, 470b, and nine hours of cinema history courses; cinema studies, 355, 356, 360, 368, 460, 461, 462, 463, 464, 468, 470a, and 499; fine arts photography, 310, 311, 320, 322, 401, 402, 420, 421, 422, 423, 425, and 470c; professional photography, 310, 311, 320, 322, 401, 402, 403, 405, 406, 407, 408, 415, and 418; photojournalism, 310, 311, 320, 322, 407, 408, 418, and Journalism 300, 310, and 311.

Cinema and Photography 499 or its equivalent is required of all majors who have not completed 320 and 322 and optional for others. This senior thesis will consist of the preparation of a photographic portfolio, film, screenplay, research or critical paper under the supervision of a cinema and photography faculty member. A copy of the thesis is to be provided for the department by the student.

Students with an interest in cinema studies may earn credit toward their Southern Illinois University at Carbondale degree by studying at the Inter-University Center for Film and Critical Studies in Paris. Information about this program is available from the department.

Students provide photographic materials for all cinema and photography production courses. In still photography production courses, students supply their own film, photographic paper, certain specialized chemicals, and a fully adjustable 35mm or 120 roll film camera. Some students have found that owning additional items of equipment is advantageous. A cost of $15 for laboratory materials is charged for each still photography production course in which the student enrolls. In cinema production courses, students provide their own film, processing, recording materials, and editing supplies. In courses which involve the screening of a number of films, there is a $10 screening fee.

The University reserves the right to retain examples of the work of each student in each photography class, to make and retain prints of all films made as part of course work other than thesis, and to retain copies of student papers. Such photographs, films, or papers become part of a permanent departmental collection.

No more than nine hours from a combination of the following courses may count toward the first 38 hours in the cinema and photography major: 470, 491, 495, 497.

Electives, required for the major in cinema and photography, are defined as coursework outside the minimal General Education requirements and not offered for major credit in the department. There is no required minor.

Bachelor of Arts Degree, College of Communications and Fine Arts

General Education Requirements	45
Requirements for Major in Cinema and Photography	38-54
Either Cinema and Photography 310 and 311 or 360 and 368	6
Either Cinema and Photography 320 and 322 or 355 and 356	8
Cinema and Photography courses numbered 400 to 499	24
Must include 499 or its equivalent if 320 and 322 have not been taken.	
Cinema and Photography electives	0-16
Electives (Cinema and Photography courses will not be counted)	21-37
Total	120

Courses

257-1 to 12 Work Experience. Used to recognize concurrent structured and unstructured work experience related to the student's educational objective. One to 30 hours of credit in

257 and 258 may be applied toward graduation requirements following departmental evaluation and approval. Prerequisite: consent of the department.

258-1 to 12 Work Experience. Used to recognize past work experience related to the student's educational objective. One to 30 hours of credit in 257 and 258 may be applied toward graduation requirements following departmental evaluation and approval. No grade for prior work experience.

259-1 to 12 Technical Subjects. Used to recognize credit in cinema and photography earned in art, technical or trade schools above the high school level. One to 12 hours of credit may be applied toward graduation requirements following departmental evaluation and approval of the credit.

310-3 History of Still Photography. History, aesthetics and appreciation of still photography. Covers the period from 1839 to World War II. Students purchase texts. Elective Pass/Fail.

311-3 Contemporary Photography. Uses, styles and influences of contemporary still photography. Covers the period from World War II to the present. Students purchase texts. It is strongly recommended that 310 be taken prior to 311. Elective Pass/Fail.

320-4 Basic Photography. Introduction to photographic communication. Basic camera controls, black and white film and print processing, the use of 35mm and large format cameras. Students purchase texts and provide photographic materials and chemicals. Each student must have available a fully adjustable camera. $15 cost for additional laboratory materials. Elective Pass/Fail.

322-4 Color Photography. Theory, techniques and aesthetics of color photography. Production of color prints and transparencies. Students purchase texts and provide photographic materials and chemicals. Each student must have available a fully adjustable camera. $15 cost for additional laboratory materials. Prerequisite: 320 and consent of department. Elective Pass/Fail.

355-4 Film Production I. Basic techniques for filmmaking. Production of Super 8 motion pictures. Students purchase texts, film stock and processing. Requires access to Super 8 camera and cassette recorder. Elective Pass/Fail.

356-4 Film Production II. Techniques of 16mm double system sound film production. Production of films by individuals or crews. Students purchase texts, film stock, processing and sound materials. Prerequisite: 355 and consent of department. Elective Pass/Fail.

360-3 Film Analysis. The relationships among structure, style and meaning in all types of films. Screening fee. Students purchase texts. Elective Pass/Fail.

368-3 Introduction to Cinema Theory. A survey of cinema theories propounded by figures such as Münsterberg, Arnheim, Eisenstein, Bazin, Kracauer, and important modern theorists. The course covers the wide range of major attempts to derive the essence of cinema. Films that exemplify or raise theoretical issues are screened. Screening fee. Students purchase texts. Elective Pass/Fail.

401-3 Large Format Photography. Introduction to the aesthetics and techniques of large format (sheet film cameras) photography with emphasis on personal expression and commercial/professional applications. Students purchase texts and provide photographic materials and chemicals. $15 for additional laboratory materials. Prerequisite: 322 or concurrent enrollment and consent of department. Elective Pass/Fail.

402-3 Sensitometry. An advanced course dealing with the technical and visual applications of the black and white process. Explores the zone system, density parameter system, and practical chemistry. Also deals with the visual application of these systems. $15 cost for additional laboratory materials. Prerequisite: 322.

403-3 Studio Portraiture. History, theory and practice of formal studio portrait photography. Students purchase texts and provide photographic materials and chemicals. $15 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

405-3 Commercial/Industrial Photography. History, theory and practice of commercial and industrial photography. Students purchase texts and provide photographic materials and chemicals. $15 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

406-3 Advertising/Illustrative Photography. History, theory and practice of photography as used for advertising, illustration and editorial purposes. Students purchase texts and provide photographic materials and chemicals. $15 cost for additional laboratory materials. Prerequisite: 405 and consent of department. Elective Pass/Fail.

407-3 Publications Photography I. History, theory and practice of photographic news reporting with emphasis on production and design of picture stories and essays. Students purchase texts and provide photographic materials and chemicals. $15 cost for additional laboratory materials. Prerequisite: 322 and/or consent of department. Elective Pass/Fail.

408-3 Publications Photography II. History, theory and production of picture essays, including research, lay-out, captions and text. Black and white and color. Students purchase texts and provide photographic materials and chemicals. $15 cost for additional laboratory materials. Prerequisite: 407 and consent of department. Elective Pass/Fail.

415-3 Technical and Scientific Photography. History, theory and application of photographic research methods in science, technology and medicine. Students purchase texts and provide photographic materials and chemicals. $15 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

418-3 Documentary Photography. Survey of the history and theory of documentary still photography. Production of documentary photographic essays dealing in depth with an aspect of contemporary life. Students purchase texts and provide photographic materials and chemicals. $15 cost for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

420-3 Experimental Camera Techniques. Experimental approaches to the creation of photographic images in the camera. Students purchase texts and provide photographic materials and chemicals. $15 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

421-3 Experimental Darkroom Techniques. Experimental darkroom manipulations of the straight camera image. Students purchase texts and provide photographic materials and chemicals. $15 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

422-3 Advanced Color Photography. Advanced study and production of color photographs with emphasis on experimental techniques using Dye Transfer, Kwik Proof and other forms of photo-mechanical reproduction. Students purchase texts and provide photographic materials and chemicals. $15 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

423-3 Reconstruction of Color. A study of the principle of color separation in photography as it relates to the processes of dye transfer, silkscreening, lithography, letter press, etching, and other reproduction processes. Students purchase texts and provide photographic materials and chemicals. $15 cost for additional laboratory materials. Prerequisite: 322. Elective Pass/Fail.

424-4 (2, 2) Mangement of the Photographic Unit. Theory and practices of management in an internal photographic unit or commercial studio. First semester deals with management theory and analysis of various management practices. Second semester involves preparation by each student of a management survey and analysis of an existing unit or studio. Students purchase texts. Prerequisite: consent of department.

425-3 to 9 Studio Workshop. An intensive workshop focusing on current trends in photography as a fine art. Topics offered have included landscape photography, architectural photography, imagemaking, introduction to the studio, among other. Students provide photographic materials and chemicals. $15 for additional laboratory materials. Prerequisite: 322 and consent of department. Elective Pass/Fail.

452-3 Film Planning and Scripting. Analysis of both scripted and non-script films. Script as a basis for production. Practice in preparing film plans, treatments, storyboards and scripts. Students purchase texts. Prerequisite: 355 and/or consent of department. Elective Pass/Fail.

454-3 Graphic/Animated Film Production. Practical course for visual expression related to the graphic film; symbology, composition, kinestasis, animation, typography, color and materials. Students purchase texts and materials. Prerequisite: 355 and either 465 or consent of department. Elective Pass/Fail.

455-3 Film Production III. Advanced production by individuals or crews of 16mm sound films from pre-production through shooting. Intensive study of budgeting, production planning, scripting, casting, location and studio shooting techniques, equipment rental, lighting, and double system sound filming. Students provide film stock, processing and sound materials. Prerequisite: 356, 452 and consent of department. Elective Pass/Fail.

456-3 Film Production IV. Continuation of 455 through editing and post production to a first answer print. Intensive study of editing, sound mixing, laboratory procedures and distribution problems. Students provide expendable editing and sound materials and are responsible for laboratory costs. Prerequisite: 455 and consent of department. Elective Pass/Fail.

460-3 History of the Silent Narrative Film. Study of the theatrical film from its beginning to 1930. Screening fee. Students purchase texts. Elective Pass/Fail.

461-3 History of the Sound Narrative Film: 1927-1945. Study of the theatrical sound film from its beginnings to 1945. Screening fee. Students purchase texts. Elective Pass/Fail.

462-3 History of the Documentary Film. Study of the development of the non-fiction film with emphasis on the documentary. Screening fee. Students purchase texts. Elective Pass/Fail.

463-3 History of the Experimental Film. Study of experimentation in cinema from the turn of the century, through the avant garde periods, to contemporary independent films. Screening fee. Student purchase texts. Elective Pass/Fail.

464-3 History of the Contemporary Film. Study of the major movements in theatrical motion pictures from neo-realism to the present. Screening fee. Students purchase texts. Elective Pass/Fail.

465-3 History of the Animated Film. Study of the history, techniques, and aesthetics of

the graphic/animated film. Students purchase texts. Screening fee. Elective Pass/Fail.
468-3 Advanced Cinema Theory. An intensive study of the major cinema theoretical approaches that center upon the writings by Eisenstein, Bazin, and recent sign and system scholars. Films important to or exemplary of the theories are screened. Screening fee. Students purchase texts. Prerequisite: 368. Elective Pass/Fail.
470-1 to 9 (1 to 9, 1 to 9, 1 to 9, 1 to 9) Advanced Topics. An advanced course concentrating on special topics in cinema and photography. **(a)** Advanced studies in cinema history/theory. Topics offered have included the information film, feminist and ideologial criticism of film. **(b)** Advanced studies in film production. Topics offered have included motion picture sound workshop, narrative film workshop. **(c)** Advanced studies in photography. Topics offered have included presentation and publication, the figure, non-silver, fantasy photography, among others. **(d)** Advanced studies in interdisciplinary topics. Not more than 6 semester hours may be counted for graduate credit. Not more than 9 semester hours of 470, 491, 495, and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. A screening fee or a $15 fee for laboratory materials may be required. Prerequisite: consent of department.
491-1 to 9 Individual Study in Cinema or Photography. Research in history, theory or aesthetics. Usually taken 3, 3, 3. Not more than 9 semester hours of 470, 491, 495, and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Prerequisite: consent of department. Elective Pass/Fail.
492-1 to 3 Practicum. Practical experience in the presentation of photographic theory and procedures. Does not count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.
495-1 to 12 Internship in Cinema or Photogrphy. Credit for internship with professional film or photographic units. Not more than 9 semester hours of 470, 491, 495 and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.
497-1 to 9 Projects in Cinema or Photography. Individual or crew projects in motion picture production or still photography. Usually taken 3, 3, 3. Additional laboratory materials costing $15 required for still photography projects. Not more than 9 semester hours of 470, 491, 495, and 497 combined may count toward the first 38 hours for the B.A. in cinema and photography. Not for graduate credit. Prerequisite: consent of department. Elective Pass/Fail.
499-4 Senior Thesis. Preparation of a portfolio, film, research or critical paper under the supervision of a cinema and photography faculty member. Normally taken during last term in residence, the senior thesis is evaluated by the departmental faculty. The department will retain one copy of all theses. Additional laboratory materials costing $15 required for still photography projects. Students interested in producting a film for 499 should have completed 355, 356, 360, 368, 452, and nine hours of cinema history courses. Not for graduate credit. Prerequisite: consent of department. Mandatory Pass/Fail.
541A-3 Seminar: History of Photography, 1839 to World War II.
541B-3 Seminar: Contemporary History of Photography.
542A-3 Seminar in Film History: American.
542B-3 Seminar in Film History: International.
574-3 Contemporary Theory and Analysis of Cinema.
591-1 to 6 Individual Study in Cinema and Photography.
595-1 to 4 (1,1,1,1) Graduate Seminar.
597-1 to 16 MFA Projects.
598-1 to 6 MFA Final Creative Project.
601-1 to 12 per semester Continuing Research.

Clothing and Textiles

(SEE VOCATIONAL EDUCATION STUDIES)

Coaching (Minor)

(SEE PHYSICAL EDUCATION)

Commercial Graphics — Design (Program, Major, Courses)

The advertising business is a growing field, presenting ever increasing oppor-

tunities for men and women who have creative and artistic ability. Trained people are needed to develop story illustrations, advertising layouts, billboard design, point-of-purchase displays, package designs, direct mail pieces, annual report designs, television commercials, title cards, finished lettering, fashion illustrations, airbrush and photo-retouching, and many others.

Students in this program develop multiple art skills so they may qualify for initial positions in many different areas of advertising art and design. Each individual has a base upon which to build a career according to personal special interests and talents.

Each graduating design student is required to pass, with 90% accuracy, a vocabulary proficiency test and to have compiled a professionally acceptable portfolio of work.

The student should expect to spend approximately $800 to $1,200 for supplies, equipment, and materials over a two year period.

An advisory committee whose members are active in the advertising and graphic design professions serves the program. Current members are: Phil Corrington, art group, Bell Laboratories, Naperville; Cindy Jackson, assistant art director, Meritz, Ind., St. Louis, Mo; Richard Frybarger, director of visuals, John Deere Co., Moline; Craig Leinicke, Leinicke Design, Manchester, Mo.; Bryan Crowe, president, John Crowe Advertising, Springfield; and J.R. Zinke, art supervisor, Bell Laboratories, Naperville.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

An individual must first be accepted academically to the university, present a portfolio of required pieces, and participate in a workshop drawing test. The 60 best qualified will be invited to enter the program the following fall.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Commercial Graphics-Design

GE-B 200-level	3
GE-D 101, 153	6
School of Technical Careers 102, 199-2	4
Commercial Graphics 110, 120, 122, 124, 130, 132, 133, 134, 210, 215, 222, 224, 230	61
Total	74

Courses

110-3 Survey of Graphic Design. The student will be introduced to the events and processes through which the specialized field of graphic design has evolved to attain its present form. The relationships between the visual arts and communications technology and the significant advanced in these areas will be examined in a three hour lecture format.

120-4 Artistic Anatomy and Color Perception I. Students will demonstrate an ability to understand and use pigmental and light ray color theory and practical application. Students will also demonstrate a knowledge of the bones and muscles of the human anatomy by way of examination and further demonstrate their comprehension and talent by way of artistically and accurately drawing the figure from life. Student will also demonstrate an ability to design, organize, and structure through compositional arrangement. Lecture two hours. Laboratory three hours. Prerequisite: concurrent enrollment in 122 and 124.

122-4 Technical Drawing for Graphics. Students will demonstrate an ability to understand and utilize the proper point of perspective in illustration and to use the T-square, triangle, and drawing instruments in precisely executing geometric forms, mechanical, and industrial illustration. In addition, students will demonstrate an ability to render objects on scratchboard: the utilization of zipatone patterns and the proper use of the ruling pen to accurately execute ruled business forms. Lecture two hours. Laboratory three hours. Prerequisite: concurrent enrollment in 120 and 124.

124-4 Graphic Layout and Typography I. Student will demonstrate an ability to use the basic principles of layout, how to do thumbnails, roughs, and clear accurate comprehen-

sives. They will also demonstrate an understanding of basic lettering styles and techniques with chisel point pencil. They will demonstrate an ability to understand the history and practical uses of typography in advertising. Lecture two hours. Laboratory three hours. Prerequisite: concurrent enrollment in 120 and 122.

126-2 Fundamentals of Drawing and Composition. For non-majors. The student will demonstrate awareness of perspective, light and shade, color theory and application, and composition through basic drawing techniques. Lecture one hour. Laboratory two hours. Elective Pass/Fail.

128-2 Fundamentals of Graphic Processes. The student will be made aware of the various principles and styles of layouts, letter forms and typography and prepare mechanicals to demonstrate a knowledge of the various printing methods. The student must supply all materials used. Lecture one hour. Laboratory two hours. For non-majors. Elective Pass/Fail.

130-4 Artistic Anatomy and Color Perception II. The student will continue to demonstrate knowledge and artistic ability of the human anatomy in the development of advertising, illustration, fashion illustration, and by way of modification the development of the cartoon figure. Lecture two hours. Laboratory three hours. Prerequisite: 120, 122, and concurrent enrollment in 132 and 134.

132-4 Airbrush and Photo Retouching. The student will demonstrate development of skills in the operation and techniques of airbrush rendering used for mechanical and illustrative purposes, and in addition, will retouch black and white photographs suitable for reproduction. Lecture two hours. Laboratory three hours. Prerequisite: 120 and 122 and concurrent enrollment in 130 and 134.

133-1 Copyfitting. The student will demonstrate an ability through discussion and examination to properly solve copy fitting problems, specify how many lines a given manuscript or ad will set, how deep, how many pages in any given format, and to calculate the number of characters per pica and per line. Lecture one hour. Prerequisite: concurrent enrollment in 134.

134-4 Graphic Layout and Typography II. The students will demonstrate their ability through discussion and examination to identify at least 14 different type faces on sight. In addition, they will demonstrate an ability to prepare clean, accurate, professional, quality paste-up, keylines with overlays, and separations. They will demonstrate an ability to work with offset lithography, letter press, gravure, and silk screen printing processes. Lecture two hours. Laboratory three hours. Prerequisite: 122 and 124, and concurrent enrollment in 130, 132, and 133.

200-1 to 2 (1,1) Artfair Exhibition. Students will receive practical experience in the coordination and development of an art exhibition. They will participate in the development of announcements, mailers, cataloging, scheduling news releases, receiving of entries, security, and returning procedures. They will develop a systems flow chart for the effective and smooth operation of an exhibition including hands-on operation of exhibit construction and location. Laboratory three hours. Elective Pass/Fail.

210-8 Advertising Graphics. Students will demonstrate an ability to apply the techniques learned during the first year in the preparation of professional assignments in the areas of marker comps, logo design, cartoons to be used for various types and styles of advertising illustration, and storyboards for television commercials. Further, they will demonstrate an ability to design professional quality letterheads, envelopes, business cards, and matchbook covers. In addition, students will have their work selected for production on client-oriented publications. They will be assigned to a discussion group in order to receive the benefit of personal critique and individual progress and development assistance for projects and assignments. Lecture four hours. Laboratory six hours. Prerequisite: 130, 132, and 134.

215-8 Dimensional Design. Students will demonstrate an ability to conceptually order verbal information to form a precise concept, and to express the concept visually in the execution of point-of-purchase displays, packaging, exhibits, and signs. They will also show an ability to do package design. Students will be assigned to a discussion group in order to receive the benefit of personal critique and individual progress and development assistance for projects and assignments. Lecture four hours. Laboratory six hours. Prerequisite: 210 and 224 and concurrent enrollment in 222.

222-8 Graphic Design and Advertising Illustration. Students will demonstrate an ability to prepare professional quality assignments in the areas of cover and billboard design and illustrations, and the complete development of storyboards for television commercials. They will have the opportunity to have work selected for production on client-oriented publications. Students will be assigned to a discussion group in order to receive the benefit of personal critique and individual progress and development assistance for projects and assignments. Lecture four hours. Laboratory six hours. Prerequisite: 210 and 224 and concurrent enrollment in 215.

224-8 Publication Graphics. Students will demonstrate an ability to create new and

unusual techniques in advertising design, sales promotion booklets, tent cards, and folder design with complete production art. Contemporary techniques in design and production, the use of color keys and stock will be emphasized. They will also have the opportunity to have work selected for production on various client-oriented publications. Students will be assigned to a discussion group in order to receive the benefit of personal critique and individual progress and development assistance for projects and assignments. Lecture four hours. Laboratory six hours. Prerequisite: 130, 132, 134 and concurrent enrollment in 210.

230-1 Job Orientation Seminar. Students will demonstrate a knowledge through discussion and examination of the operations of large and small agencies and studios including the various responsibilities of the people employed in them by class discussion and examination. Prospecting for employment, working conditions, prospects for advancement, how much an artist should charge for a piece of art, and the legal responsibilities of the artist-designer to the client-agency will be discussed. Students will conclude this course with the presentation of a portfolio demonstrating their ability to do professional quality work (at least 10 plates) and will have acquired the experience of being interviewed for an artist position. Lecture one hour.

240-3 to 12 Special Study. A student with a special interest in a particular advertising art or graphic design area will be selected projects and research to develop additional professional skill. Requires approval of the program supervisor. Lecture three hours. Laboratory 24 hours maximum.

Communication Disorders and Sciences (Department, Major, Courses)

The program in communication disorders and sciences has as its objective the training of qualified personnel to aid people who are speech, language, or hearing impaired. The undergraduate curriculum is broad in scope and gives the student the necessary preprofessional background for the clinical-research program offered at the master's level. Both state and national certification require the master's degree. Students who complete the graduate program at the master's level are qualified for positions in public or private clinics, schools, hospitals, or agencies. Students who complete the graduate program at the doctoral level seek positions with college and universities, research institutes, or governmental agencies.

The Department of Communication Disorders and Sciences is dedicated to developing students for leadership roles in the profession. Students are expected to develop programs that will enhance their individual strengths in light of their vocational goals. The undergraduate program is extremely flexible. This permits students to develop significant concentration areas outside of the department while they are laying the foundation for their graduate education.

Observation and beginning clinical experience is obtained at the undergraduate level through work at the University's clinical center and area clinics, schools, and agencies. The undergraduate program is designed to provide the student with sufficient information and experience to determine the advisability of pursuing a graduate degree. Those students who do not continue in the profession will find themselves well prepared to enter the job market with a broadly based education or pursue graduate work in allied professions.

All students are encouraged to plan programs of study to meet the academic and practicum requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association or the Standard Special Certificate — Certificate in Speech and Language Impaired of the state of Illinois. Planning at the bachelor's level will facilitate completion of American Speech-Language-Hearing Association and State of Illinois certification requirements in conjunction with the master's degree program.

Bachelor of Science Degree, College of Communications and Fine Arts

COMMUNICATION DISORDERS AND SCIENCES — PREPROFESSIONAL PROGRAM

General Education Requirements	45
GE-A, GE-B, GE-C	30
GE-A: 9 hours minimum from 3 different departments including 115	
GE-B: 10 hours minimum from 3 different departments including 108 and 202	
GE-C: 9 hours minimum from 3 different departments	
GE-D: 101, 117, 107, and 152 or 153	11
GE-E: Health and physical education	4
Requirements for a Major in Communication Disorders and Sciences	50
Psychology 211, 301, 305	10
Rehabilitation 406	3
Communication Disorders and Sciences 105, 200, 203, 214, 302, 303, 307, 316, 318, 319, 401, 419, and 493	37
Electives by Advisement	25
If the education option is not selected, electives must include 12 additional semester hours of psychology selected from the following courses: Psychology 307, 309, 311, 314, and 411. The remaining 13 hours selected by advisement.	
Total	120

Bachelor of Science Degree, College of Communications and Fine Arts or Bachelor of Science Degree, College of Education

A student in the College of Communications and Fine Arts or the College of Education who plans to be a public school speech and language clinician in Illinois, thereby needing to prepare to meet the requirements for the Standard Special Certificate — Certificate in Speech and Language Impaired, should follow the program of course requirements listed above. In addition the requirements for the Teacher Education Program must be completed as part of the electives by Advisement: Education 201-1, 301-2, 302-2, 303-2, and 304-2.

Education 350, 400, and 401, the student teaching requirement and related seminar, may not be undertaken until completion of two additional requirements: 1) 9 semester hours (3 courses) selected from 505, 507, 510, 512, and 420; and 2) 70 clock hours from at least three of the following practicum courses: 494, 495, 496, 498, and 499. See also Teacher Education Program, page 66.

Courses

100-0 to 1 Speech Clinic: Therapy: For students with speech and hearing deviations who need individual help. Prerequisite: consent of instructor.

104-3 Training the Speaking Voice. For those students who desire to improve their voice and articulation. Elective Pass/Fail.

105-3 Introduction to Communication Disorders. A general survey course devoted to a discussion of the various problems considered to be speech and hearing disorders with special emphasis on basic etiological classification schemes and their incidence in the current population. Opportunities for directed observation.

200-3 Phonetics. Instruction in the use of phonetic symbols to record the speech sounds of midland American English, with emphasis on ear training, and a description of place and manner of production of these sounds. Program retention course.

203-3 Introduction to Speech-Language and Hearing Science. An introduction to the science of general speech including the history of research in the field and significant experimental trends in the future. Open to all students. Program retention course.

214-3 Anatomy and Physiology of the Speech and Hearing Mechanism. Structure and function of the speech and hearing mechanism. Program retention course.

302-3 Phonological Development and Disorders. A general introduction to the phonological development in children on a normative basis. In addition to introducing the student to the classical studies in articulatory development, this course provides a general exposure to

the implications of classical phonetic theory, coarticulatory theory and distinctive features theory as a framework for therapy and research. Prerequisite: 3.0 grade point average in program retention courses or concurrent enrollment and consent of chairperson.

303-3 Language Development and Disorders. Presentation of the progressive stages of language development in the areas of syntax and semantics. The student is acquainted with normal developmental processes and introduced to identification and remediation of therapeutics with children from ages three to twelve. Theoretical considerations and terminology related to traditional structural and transformation grammars are introduced as tools for interpreting the acquisition processes. Prerequisite: 3.0 grade point average in program retention courses or concurrent enrollment and consent of instructor.

307-3 Introduction to Organics. An introduction to the organic bases of communication disorders. An emphasis will be placed on the foundations of development and teratological events and influences which result in specific communication disorders, and overview of those disorders, and their implications for the individual. Observations as directed. Prerequisite: 214 or consent of instructor.

316-3 Introduction to Audiology and Audiometry. Basic orientation to the professional field of audiology, its history and its goals; basic acoustics, the phylogeny, anatomy and physiology of the human ear, and significant pathologies of the ear. Prerequisite: 3.0 grade point average in program retention courses or concurrent enrollment and consent of instructor.

318-3 Parameters of Voice. Physio-acoustic parameters of voice quality variables evidenced in verbal communication. Lectures and demonstrations emphasize basic information necessary to study for the treatment of voice disorders. Prerequisite: 3.0 grade point average in program retention courses or concurrent enrollment and consent of instructor.

319-3 Stuttering. Deals with diagnostic and therapeutic techniques for the understanding and treatment of stuttering. Prerequisite: 3.0 grade point average in program retention courses or concurrent enrollment and consent of instructor.

401-3 Diagnostic Procedures in Communication Disorders. A general introductory course devoted to discussion of the role of the speech and hearing clinician as a differential diagnostician. Special emphasis is placed on correlating information obtained from the oral-peripheral examination, articulation and language evaluation, audiometric and case history information in constructing the initial evaluation report. Prerequisite: 302, 303, and one additional 300-level course or consent of chairperson.

408-3 Communicative Disorders: Craniofacial Anomalies. An introduction to the ontology, teratology, and management of cleft palate and various craniofacial syndromes important to majors and non-majors interested in this aspect of communication and its disorders. Associated problems of personal and social adjustments are also examined. Prerequisite: 105, 214, 318, or consent of instructor.

419-3 Communication Problems of the Hearing Impaired. Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 302, 303, and 316, or equivalents and consent of instructor.

420-3 Audiology I: Pure Tone and Speech Procedures. A thorough consideration of pure tone evaluation procedures, masking techniques, materials and procedures for speech audiometry, assessment of difficult-to-test populations, and basic otological correlates of audiology. Prerequisite: 302, 303, 316, 419, or equivalent and consent of instructor.

428-3 Communication Disorders and the Classroom Teacher. Etiology and therapy of common speech defects. May be taken by all inservice teachers, seniors, and graduate students in education.

431-1 to 6 (1 to 3, 1 to 3) Biofeedback Communication. An investigation into the experimental approaches for the study of the phenomena of speech. Evoked potential and signal averaging techniques, psychophysiological methodology. Laboratory experience with various biofeedback instrumentation, EMG, EEG, temperature ECG, etc. Open to non-majors.

438-2 Problems of Communication and the Process of Aging. Reviews problems of communication related to the aging process and examines relevant diagnostic and therapeutic techniques. For non-majors only. Prerequisite: senior or graduate standing.

450-3 Neuroanatomical Basis of Human Communication. Examination of the central nervous system (brain and spinal cord) as it relates to normal and disordered human communication. Presentation of basic neuroanatomy, common neuropathologies relevant to communication disorders, and strategies in neurogenic problem solving. Prerequisite: 214, 307, or consent of instructor.

485-1 to 3 Special Topics in Communication Disorders and Sciences. Topical presentations of current information on special interests of the faculty not otherwise covered in the curriculum. Designed to promote better understanding of recent developments related to disorders of verbal communication. Open to advanced undergraduate and graduate students with consent of instructor.

491-1 to 4 (1 to 2, 1 to 2) Individual Study. Activities involved shall be investigative,

creative, or clinical in character. Must be arranged in advance with the instructor, with consent of the chairperson. Prerequisite: consent of chairperson.
493-1 to 2 (1, 1) Basic Clinical Practice: Principles and Procedures. Supervised clinical practicum in basic theory procedures, diagnostic techniques, and preparation of reports. Prerequisite: 302, 303, and two additional 300-level courses or equivalents and consent of chairperson.
494-1 to 2 (1, 1) Advanced Clinical Practice: Phonological Disorders. Advanced clinical practicum in articulation. Emphasis will be placed on specialized therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 302 and 493 or equivalents and consent of chairperson.
495-1 to 2 (1, 1) Advanced Clinical Practice: Language Disorders. Advanced clinical practicum in language. Emphasis will be placed on specialized therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 303 and 493 or equivalents and consent of chairperson.
496-1 to 2 (1, 1) Advanced Clinical Practice: Hearing Disorders. Advanced clinical practice in hearing disorders. Emphasis will be placed on rehabilitative procedures in audiology. Prerequisite: 316 and 493 or equivalents and consent of chairperson.
497-1 to 2 (1, 1) Advanced Clinical Practice: Hearing Diagnostics. Advanced clinical practice in hearing diagnostics. Emphasis will be placed on diagnostic techniques used in the preparation of basic and advanced audiological reports. Prerequisite: 316, 420, and 493 or equivalents and consent of chairperson.
498-1 to 2 (1, 1) Advanced Clinical Practice: Voice Disorders. Advanced clinical practicum in voice disorders. Emphasis will be placed on specialized therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 318 or equivalent and consent of chairperson.
499-1 to 2 (1, 1) Advanced Clinical Practice: Fluency Disorders. Advanced clinical practicum in fluency disorders. Emphasis will be placed on specialized therapy procedures, diagnostic techniques, and preparation of reports. Prerequisite: 319 or equivalent and consent of chairperson.
500-3 Research Design in Speech Pathology and Audiology.
503-3 Laboratory Instrumentation in Speech-Language and Hearing Science.
505-3 Phonological Acquisition.
507-3 Lanaguage Acquisition.
510-3 Stuttering: Behavior Assessment and Therapy.
512-3 Voice Disorders.
517-3 Seminar: Language Disorders in Children.
521-3 Audiology II: Peripheral and Central Auditory Tests.
525-3 Amplification for the Hearing Impaired.
526-3 Audiology III: Objective Procedures and Hearing Conservation.
528-3 Seminar: Physio- and Psycho-Acoustics of the Ear.
530-3 Aural Rehabilitation/Auditory Perceptual Disorders.
533-3 to 6 (3, 3) Seminar: Speech-Language Science and Experimental Phonetics.
536-3 Seminar: Administration of Speech and Hearing Programs.
540-3 Neurogenic Disorders of Communication I.
541-3 Neurogenic Disorders of Communication II.
544-3 Seminar: Phonological Disorders in Children.
548-3 Seminar: Stuttering Behavior — Theory and Research.
550-1 to 6 (1 to 3, 1 to 3) Professional Training Seminar.
590-1 to 4 (1 to 2, 1 to 2) Readings in Speech-Language Pathology and Audiology.
593-1 to 3 Research Problems in Speech-Language Pathology and Audiology.
598-1 to 3 Internship in Speech-Language Pathology and Audiology.
599-1to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Communications and Fine Arts (College, Courses)

Courses

397-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Communications and Fine Arts. Prerequisite: consent of instructor.
497-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Communications and Fine Arts. Prerequisite: consent of instructor.

Community Development (Major [Graduate only], Minor Courses)

In recognition of major national legislation in community development and the growing need for informed leaders and trained practitioners at the community level in many fields, this minor has been developed.

Requirements: 15 semester hours, including 401 and at least 6 additional hours selected from community development courses and 6 more hours from community development courses or from courses closely related to the community development field offered in other departments. A list of approved courses is available from the community development office. If students receive credit in their major for any of these courses, it may not also be counted toward their community development minor.

Courses

200-3 The Nature of Community. Human communities have existed since pre-history, but the nature of what a community is, should, or could be remains a subject of wide debate. The purpose of this course is to clarify some of the issues of this debate by examining some of the ways that communities have changed since prehistoric times as well as the different philosophies and theories of community, both past and present, and also by identifying those aspects and elements of community life that appear common to all human communities. Elective Pass/Fail.

201-3 Communes and Communities: Experiments Past and Present. Throughout recorded history various individuals have envisioned, and various groups have deliberately sought to establish, communities that differed greatly from the conventional communities of the time. Some, like the medieval monastic orders or the "Bruderhoffs" of today, have been remarkably durable; but many have failed. In this course, the history and philosophy of experimental and intentional communities from monastaries to communes will be reviewed with the object of better understanding the social conditions that give birth to such communities and those conditions that appear to either enable or inhibit their survival. Elective Pass/Fail.

202-3 Communities of the Future. The focus of this course will be on problems of and solutions to the creation and maintenance of human settlements and the interdependence of social, cultural, and economic elements. Problems of crime, disease, health, moral issues, government control, population, migration, and others will be explored against a background of innovative, technical and utopian social ideas about communities of the future. Elective Pass/Fail.

289-3 Field Service Seminar. (Same as Social Work 289.) This seminar is to be taken concurrently with 295 or Social Work 295. Prerequisite: consent of instructor.

295-1 to 6 Field Service Practicum in Southern Illinois. (Same as Social Work 295.) This course is designed for freshmen and sophomores who are volunteering service to community, social service, or health service agencies in southern Illinois. Credit based upon time spent in direct service. Approval of agency required for registration. Mandatory Pass/Fail.

302-3 Community Self-Study. An introduction to problem analysis and needs assessment. The self-study approach, pioneered by the Southern Illinois University at Carbondale community development program, enables citizens in small towns and social and economic groups in urban areas to identify needed changes harmonious with their values. Examines the community self-study method and applications to current problems.

401-3 Introduction to Community Development. This course surveys the field of community development, an applied social science that encourages self-reliance by generating change and growth strategies for groups and communities. The course focuses on the history and philosophy of community development, citizen rights issues, change techniques, value dilemmas confronting change agents, and examination of some current community development programs.

402-3 Third World Community Development. Analyses of the history, goals, methods, and techniques of socioeconomic development in the Third World countries. Cultural, economic, social structural, political, and administrative factors in development and in the process of community organization are discussed. Case studies from Africa, Asia, and Latin America.

403-3 Community Organization. An examination of basic approaches to community organization used by change agents and human service workers. Special emphasis is placed on sensitizing students to consumer participation issues.

404-3 Role Theory and Analysis in Community Development. The focus of this course is on role theory and methods of analysis. The student will gain considerable exposure to the techniques of role analysis as an evaluation tool in community development training and program development. Elective Pass/Fail.
405-3 Social Planning. Introduction to the methods, practices, functions, and ethics of social planning in the United States, including a critical perspective. Criminal justice, health, manpower, welfare, and other sectors of social planning will be discussed to illustrate the principles of social planning.
489-3 Field Service Seminar. (Same as Social Work 489.) This seminar is to be taken concurrently with 495 or Social Work 495. May not be taken for credit if credit has been earned in 289 or Social Work 289. Prerequisite: consent of instructor.
491-1 to 6 Independent Study in Community Development. Supervised individual study and projects in keeping with the needs of each student. Prerequisite: consent of instructor.
495-1 to 6 Advanced Field Service Practicum in Southern Illinois. (Same as Social Work 495.) This course is directed at upperclassmen and graduate students volunteering service to community, social service, or health agencies in southern Illinois. Credit based on time spent in direct service. Approval of agency required for registration. May not be taken for credit if credit has been earned in 295 or Social Work 295. Mandatory Pass/Fail for undergraduates.
497-1 to 12 (1 to 3 per topic) Seminar in Community Development. The identification and analysis of special problems in community development. (a) Project funding, evaluating, and reporting; (b) Central and peripheral systems in community development; (c) Community development cooperatives and credit unions; (d) Research problems and methods; (e) Special problems. Credit limited to not more than three per topic and not more than 12 total.
500-3 Research Seminar in Community Development.
501-4 Small Group Process in Community Development.
502-3 Community and Change.
503-3 Community Development Practice.
589-2 Community Development Internship Seminar.
593-1 to 6 Individual Research in Community Development.
595-1 to 8 Internship.
599-1 to 6 Thesis Research.
601-1 to 12 per semester Continuing Research.

Comparative Literature (Minor)

A comparative literature minor is available within the College of Liberal Arts. The program is directed by the comparative literature adviser in either the Department of English or the Department of Foreign Languages and Literatures. The minor consists of 18 hours of course work at or above the 300-level in literature other than those in which the student is majoring.

Computer Science (Department, Major, Courses)

The Department of Computer Science offers courses covering the major areas of computer science. These courses constitute the basis for an undergraduate major which prepares students for a variety of professional and technical careers in business, industry, and government or for graduate work leading to advanced degrees. In addition, the department offers an undergraduate minor and service courses for students from other fields who will use computer science as a tool in their own areas. Students interested in computer science will be advised with respect to computer science courses by the department so they may profitably pursue their academic and professional interests.

Requirements for a major in computer science are specified in two alternative forms. The program under option A is the more flexible, broadly based, and provides preparation for a wide range of careers as well as for graduate training in computer science. Option B is more specifically oriented toward preparing a student for a career in business and management information processing.

The department enforces the following retention policy: A computer science

major will not be permitted to enter any of the courses, 204, 302, 306, 330, 411, unless that student has achieved a grade point average of at least 2.50 for all required precedent computer science courses. Any exceptions to this policy will require the written approval of the department chairperson.

Bachelor of Arts Degree, College of Liberal Arts

COMPUTER SCIENCE MAJOR – OPTION A

General Education Requirements	45
Supplementary College Requirements (See Page 75)	(4) + 4
Requirements for Major in Computer Science	58
Computer Science 202, 204, 302, 306, 330, 342, 411	23
Computer Science electives[1]	18
At least 18 additional hours including 361 or 464a. The electives should include at least 12 hours of 400-level computer science courses. The remaining courses may be 300 or 400-level computer science courses or approved courses from other departments.	
Mathematics 150, 250, 221	11
Mathematics 282 or 283	3
English 290 or equivalent	3
Electives	13
Total	120

COMPUTER SCIENCE MAJOR – OPTION B

General Education Requirements	45
Supplementary College Requirements (See Page 75)	(4) + 4
Requirements for Major in Computer Science	60
Computer Science 202, 204, 302, 306, 312, 330, 411	23
Computer Science 430, 435	6
Computer Science electives[1]	6
At least 6 additional hours of computer science courses including at least 3 hours at the 400-level.	
Mathematics 139 and 140 or equivalent	7
Mathematics 282 or 283	3
English 290 or equivalent	3
Accounting 220, 230	6
Administrative Sciences 352	3
Administrative Sciences 318 or 456 or an approved course	3
Electives	11
Total	120

[1] A Computer Science major must be able to demonstrate programming proficiency in two high level languages. Proficiency can be demonstrated in an appropriate course or by an examination.

Minor

A minor consists of Computer Science 202, 204, 302, 306 and 330.

Courses

102-3 Computers in Society. An introduction to computers, their uses, present and future roles of computer technology in society, and related social issues. Includes elementary programming using on-line terminals.

129-3 Programming Personal Computers. Overview of personal computer hardware and software. Programming in the BASIC language. Discussion of some applications software. Not for computer science majors.

202-3 Introduction to Computer Programming. An introduction to computers and programming including a discussion of algorithms, data representation, structure and debugging of programs, computers and languages. Primary emphasis will be given to the design of altorithms for the solution of problems and the programming concepts required to implement algorithms in a particular programming language.

204-3 Advanced Programming and Data Structures. A continuation of 202 which includes an emphasis on programming style, advanced features of the language, and data structures. Topics include string handling, recursion, arrays, stacks, queues, linked lists, trees, internal sorting, and searching. Prerequisiste: 202.
205-4 Advanced Programming Techniques. A version of 204 designed for students having a first course using some language other than the one used in 202. Prerequisite: consent of department.
212-3 Introduction to Business Computing. An introduction to concepts and features of computing systems with reference to business information processing. Includes a basic treatment of programming using PASCAL.
302-4 Assembly Language Programming. Basic computer organization. An extensive treatment of a specific assembly language, including macros. Prerequisite: 204 with a grade of C or better or concurrent enrollment.
306-3 Fundamentals of Computing Systems. An introduction to the organization of a computing system in terms of hardware, firmware, software. Computer architecture and hardware subsystems. Design of an assembler and other system software. Prerequisite: 204 and 302 each with a grade of *C* or better.
312-3 COBOL and Business Data Processing. COBOL and its use in business data processing. Prerequisite: 202 or 212.
314f-2 Programming Techniques in FORTRAN. A thorough treatment of FORTRAN with extensive programming practice. Prerequisite: 202 or 212.
314l-2 Programming Techniques in List and String Processing Applications. Thorough analysis of the techniques used to support string and list processing. Includes extensive programming practice. Prerequisite: 204.
318-2 Topics in Assembly Language Programming. Selected advanced topics in assembly language programming. Prerequisite: 204 and 302, each with a grade of *C* or better.
330-3 File Organization. An introduction to secondary storage devices and files. Topics include sequential files, indexed files, hashed files, inverted files, security, privacy, backup, and recovery. Prerequisite: 204 and 302, each with a grade of *C* or better.
342-3 Introduction to Discrete Structures. (Same as Mathematics 301.) Sets, relations, and functions. Elements of graph theory with emphasis on algorithms and applications to computing problems. Boolean algebras with applications to computer logic and logical design. Prerequisite: 202 or 212 and Mathematics 111 or consent of either department.
345-3 Computer Logic and Digital Design. Boolean algebra with applications to computer logic and design. Analysis and synthesis of combinational and sequential circuits. Processor and control logic design. Programmable logic arrays. Introduction to error-correcting codes. Prerequisite: 302 with a grade of *C* or better, and Mathematics 140 or 150.
361-3 Numerical Calculus. (Same as Math 361.) Algorithms for the solution of numerical problems encountered in scientific research work with special emphasis on the use of digital computers. Includes an elementary discussion of error, polynomial interpolation, quadrature, solution of nonlinear equations and linear systems, solution of differential equations. Prerequisite: 202 or 212 and Mathematics 221 and 250.
401-3 Computer Architecture. Review of logical circuit design. Processor design including control unit and arithmetic logic unit. Memory organization. Input/output. High speed and fault-tolerant computing. Prerequisite: 306 and 345, each with a grade of *C* or better.
411-4 Programming Languages. Study of the significant features of existing programming languages with particular emphasis on the underlying concepts abstracted from these languages. Includes formal specification of syntax and semantics, representation and evaluation of simple statements, grouping of statements, scopes and storage allocation, procedures. Prerequisite: 204 and 302, each with a grade of *C* or better.
414-3 Systems Programming and Operating Systems. The use and implementation of assemblers, macro assemblers, linkers, and other systems programs. Exercises in designing and writing various systems programs. An introduction into process, memory, device, and file management in batch, multiprocessing, and timeshared operating systems. Prerequisite: 306 and 330, each with a grade of *C* or better.
420-1 to 3 Topics in Computer Science for Teachers. A consideration of topics in computer science useful in curriculum enrichment in elementary and secondary education. May be repeated as topics vary. Does not count toward a computer science major. Prerequisite: consent of department.
430-3 Database Systems. A comprehensive treatment of database systems, including network, hierarchical, and relational systems. Prerequisite: 306 and 330, each with a grade of *C* or better.
435-3 Software Design and Development. An exercise in the analysis, design, implementation, testing, and maintenance of a large modular application system. Team production of a system is the focal point for the course. Topics include the system life cycle, modular design, human interfaces, external system specification, program design languages, and improved programming techniques. Prerequisite: 306 and 330, each with a grade of *C* or better.
436-3 Artificial Intelligence I. Heuristic Programming. Heuristic methods: state space,

problem reduction, game playing, general problem solver, learning machines. Prerequisite: 204 and 302, each with a grade of *C* or better.

440-3 Introduction to Computer Networks. Design and analysis of computer communication networks. Topics to be covered include data transmission, data link protocols, topological design, routing, flow control, security and privacy, distributed data processing, network performance evaluation. Prerequisite: 306 and 342.

449-3 Combinatorics and Graph Theory. (Same as Mathematics 449.) An introduction to graph theory and combinatorial mathematics with computing applications. Topics include permutations and combinations, generating functions, recurrence relations, the principle of inclusion and exclusion, Polya's theory of counting, graph theory, transport networks, matching theory, block designs. Prerequisite: 342.

451-3 Introduction to the Theory of Computing. (Same as Mathematics 451.) The fundamental concepts of the theory of computation including finite state acceptors, formal grammars, turing machines, and recursive functions. The relationship between grammars and machines with emphasis on regular expressions and context-free languages. Prerequisite: 302 and 342.

455-3 Design and Analysis of Computer Algorithms. Introduction to analysis and complexity of algorithms. Searching/sorting algorithms, polynomial matrix algorithms, graph theoretic algorithms. Introduction to complexity theory. Prerequisite: 330 and 342, each with a grade of *C* or better.

464-6 (3,3) Numerical Analysis. (Same as Mathematics 475.) An introduction to the theory and practice of computation with special emphasis on methods useful with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, numerical differentiation and integration, solution of differential equations, matrix calculations and the solution of systems of linear equations. Must be taken in a,b sequence. Prerequisite: 202 or 212, Mathematics 250, and Mathematics 221.

470-3 Computer Simulation Techniques. Applications and rationale. Design and analysis of discrete simulation models. Generation of random sequences and stochastic variates. Simulation languages. Prerequisite: 202 or 212, Mathematics 280 or 282 or 283 or equivalent.

471-3 Introduction to Optimization Techniques. (Same as Mathematics 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming,, classical optimization, separable programming, integer programming, and dynamic programming. Prerequisite: 202 or 212, Mathematics 221, and Mathematics 250.

472-3 Linear Programming. (Same as Mathematics 472.) Nature and purpose of the model. Development of the simplex method. Application of the model to various problems. Introduction to duality theory. Transportation and network flow problems. Postoptimality analysis. Prerequisite: 202 or 212, and Mathematics 221.

485-3 Computer Graphics. Study of the devices and techniques for the use of computers in generating graphical displays. Includes display devices, display processing, transformation systems, interactive graphics, 3-dimensional graphics, graphics system design and configuration, low and high level graphics languages, and applications. Prerequisite: 204 and 302, each with a grade of *C* or better, and Mathematics 139 or 221.

490-1 to 6 (1 to 3 per semester) Readings. Supervised readings in selected subjects. Prerequisite: consent of instructor and department.

491-1 to 4 Special Topics. Selected advanced topics from the various fields of computer science. Prerequisite: consent of instructor.

492-1 to 6 (1 to 3 per semester) Special Problems. Individual projects involving independent work. Prerequisite: consent of department.

493-1 to 4 Seminar. Supervised study. Preparation and presentation of reports. Prerequisite: consent of instructor.

501-3 Advanced Computer Architecture.

511-3 Formal Specification of Programming Languages.

514-3 Advanced Operating Systems.

516-3 Compiler Construction.

530-3 Database Management Systems.

532-3 to 6 Topics in Information Systems.

536-3 Artificial Intelligence II.

540-3 to 6 Advanced Topics in Computer Systems.

553-3 Formal Languages and Automata.

555-3 Theory of Computability.

564-3 to 9 (3,3,3) Advanced Numerical Analysis.

570-3 to 9 per topic (3, 3, 3) Topics in Operations Research.

590-1 to 9 Readings.

591-1 to 9 (1 to 3 per topic) Special Topics.

592-1 to 6 (1 to 3 per semester) Special Problems.

593-1 to 4 Seminar.

599-1 to 5 Thesis.

601-1 to 12 per semester Continuing Research.

Construction Technology — Building (Program, Major, Courses)

The construction technology — building curriculum is designed to meet the needs of the building industry. Particular emphasis is placed upon residential and light commercial construction. The technician working in construction must be able to communicate in the language of the industry, understand and interpret construction drawings, specifications, and methods of building fabrication and assembly. Technicians must also be capable of working in the area of middle management that exists between architect and craftsman. The technician is expected to carry out the mandates of building design. The program provides sufficient theory and laboratory work so that the graduate can perform in areas of design, drafting, construction methods, estimating, and supervision.

The curriculum is designed to accept both new freshmen and transfer students. Students entering with industrial experience or courses taken in the military may be given credit by proficiency or transcript evaluation.

Students entering this program should expect to spend about $150 over a two-year period for instruments, tools, materials, and supplies.

The program is served by an advisory committee whose members have extensive experience in the construction field. Current members are: Barry Bain, Barry Incorporated, Murphysboro; Rick Thompson, Rick Thompson & Sons, Princeton; Fred H. Persson, Steffes Construction Co., Carterville; Paul Phillips, Phillips Lathing, Inc., Carbondale; Arthur Vincent, Egyptian District Council, Carpenter's Union, Carbondale; Gerald Rehkemper, Ralph Korte Construction, Inc., Highland; and Michael Williams, J. W. Williams & Son, Carbondale.

Graduates of the program find employment as construction engineering aides, assistants within the construction supervision field, building materials sales representatives, building code inspectors, and estimators.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experiences.

Associate in Applied Sciences Degree, School of Technical Careers

Requirements for Major in Construction Technology — Building

GE-D 101 and 118 or 153	5-6
School of Technical Careers 105a,b, 107a,b, 120	11
Construction Technology 100, 102, 103, 104, 105, 110, 111, 125, 203, 207, 208, 209, 210, 211, 225	53
Electives (in Humanities or Social Sciences)	3
Total	72-73

Courses

100-1 Construction Orientation. The student will be given an overview of the construction industry and the various job opportunities available. Guest speakers and field trips are included.

102-4 Construction Drawing and Blueprint Reading. Students will learn to read architectural drawings, to sketch shop drawings and construction details, and to mechanically draw typical plans often included in a set of house plans. Lecture/laboratory six hours. Materials fee, $3.

103-4 Concrete Technology. The student will obtain knowledge of concrete, its physical and mechanical properties, and the design and control of concrete mixes. In addition, forming systems and the use of concrete as a building material in residential and light commercial construction will be demonstrated.

104-4 Surveying in Construction. The student will perform basic surveying operations necessary for the location, lay-out and construction of a building. Interpretation of platt

books, site plans, and topographic maps is included. A major portion of the course will be spent in field work. Lecture/laboratory six hours. Material fee, $2.
105-2 Construction Codes, Specifications, Inspection and Safety. This course is designed to make the students aware of safety practices on the job site, OSHA standards and accident prevention. Also, knowledge of building codes, architect and government specifications and building inspection procedures as commonly found in residential and light commercial construction will be discussed. Lecture two hours.
110-5 Residential Framing and Exterior Finish. Students will acquire the basic skills necessary to layout and build a wood frame home. Emphasis is placed on proper layout, fabrication, and erection techniques for floor, wall, and roof frame systems. Lecture/laboratory eight hours. Materials fee, $6
111-5 Interior Finish. The student will acquire the skills and knowledge necessary to complete the interior of residential or light commercial buildings. Emphasis will be given to shop and site operations required to install mouldings, cabinets, doors, windows, and wall, floor, and ceiling finishes. Lecture/laboratory eight hours. Materials fee, $6. Prerequisite: 110.
125-3 Structural Mechanics I. Students will learn fundamental principles of mechanics as they apply to stationary structures. Students will apply these principles and use tables and formulas in the determination of loads and the selection of wooden members and steel connectors which will safely carry these loads on floor and roof systems. Lecture three hours. Prerequisite: School of Technical Careers 105 or consent of department.
203-4 Construction Materials. The student will gain knowledge of physical properties, material composition, and use of materials in residential and light commerical construction. Lecture four hours. Materials fee, $2.,
207-3 Construction Management. Students will gain knowledge of construction management functions, primarily from the point of view of the building contractor. Emphasis will be placed on business operations as they relate specifically to the construction industry. Lecture three hours. Materials fee, $3.
208-3 Construction Cost Estimating. The student will be able to assist in the preparation of construction cost estimates. Actual working drawings and specifications are used extensively. Emphasis is on quantity take-off and the development of unit costs from given or derived data. Lecture three hours. Materials fee, $3. Prerequisite: 102.
209-4 Mechanical Systems. The student will obtain knowledge of electrical, plumbing, heating, and air conditioning systems commonly found in residential and light commerical buildings. Emphasis is placed on interpretation of local, state, and national codes. Active and passive solar systems are also studied as alternatives to conventional heating and cooling systems. Lecture four hours.
210-5 Remodeling and Renovation. Students will acquire knowledge of the techniques and technologies necessary to remodel, repair, or renovate existing residential and small commerical buildings. The student will study the design and construction techniques required to convert unused areas into additional living space, additions to existing structures, upgrading of mechanical and electrical systems to meet building codes and repair, renovation and maintenance of older buildings. Lecture/laboratory eight hours. Materials fee, $6. Prerequisite: 111.
211-3 Commercial Construction. Students will acquire the technical background necessary to perform operations in the construction of prefabricated single family and multifamily dwellings, agricultural buildings, prefabricated commercial and industrial metal buildings, and prefabricated concrete buildings. Lecture three hours. Prerequisite: 111.
225-3 Structural Mechanics II. Students will extend their abilities to assist engineers, architects, builders in determining stresses in members of trusses and in selecting proper-sized steel beams or open web joists, wood or steel columns or struts, welded joints, and reinforced concrete beams, footings, and basement walls. Lecture three hours. Prerequisite: 125, School of Technical Careers 105.
325-3 Quality Assurance in Construction. The student is introduced to the role of the construction inspector, will develop skills of communication with the trades and management, and will acquire knowledge of quality assurance systems, documentation techniques and significant legal aspects of construction failures. Lecture three hours. Prerequisite: 102, 103, 105, 125, 203, 225 and School of Technical Careers 107, equivalent experiences, or consent of instructor.

Consumer Economics and Family Management (Major, Courses)

The consumer economics and family management program is a part of the Division of Advanced Technical Studies. Issues in consumer economics, manage-

ment, and housing are of growing interest to consumers, business, and society. This program is concerned with (1) consumer's role and effectiveness in the marketplace, (2) the family's management of limited or restricted resources, and (3) the social and economical aspects of housing. Two specializations, consumer services in business and family services consultant, are offered leading to the Bachelor of Science degree. A minor in consumer studies is also available.

Bachelor of Science Degree, School of Technical Careers

General Education Requirements	45
GE-A	9
GE-B 108, 202 and 211 required	9
GE-C	9
GE-D 101, 117 or 118, 153, and 107 required	11
GE-E	4
Requirements for Major in Consumer Economics and Family Management	41-43
Consumer Economics and Family Management 240, 330, 340, 350, 445, 494-4, 499	20
Specialization Requirements See Requirements listed below	21-23
Electives	32-34
Total	120

CONSUMER SERVICES IN BUSINESS SPECIALIZATION

This specialization prepares students for professional opportunities in consumer affairs in industry and government. Special emphasis is placed on the role of the consumer in the marketplace and the consumer's relationship to private enterprise and government agencies. A key focus of the program is the application of concepts and the critical analysis of problems and issues affecting the consumer's interests and choices.

Specialization Requirements	21
Consumer Economics and Family Management 341, plus six additional hours	9
Finance 271	3
Marketing 304	3
Journalism 340 or 341	3
Administrative Sciences 301 or 304	3
Recommended Electives	34
Consumer Economics and Family Management 370; GE-A 221, 230, 240, 312; GE-B 212; Acccunting 210; Vocational Education Studies 335, 337, or 345; Finance 327, 328, 370, 372; Food and Nutrition 100, 156, 321, 335, 356; Marketing 305, 329, 363, Political Science 321; Radio-Television 467; Speech Communication 221.	

FAMILY SERVICES CONSULTANT SPECIALIZATION

This specialization is designed to give students a knowledge and understanding of the family's management and allocation of resources. This specialization prepares students for employment in public and private welfare agencies, cooperative extensions and local government and other programs. The low-income family is of particular interest in this specialization. Elective courses should reflect the student's personal employment goals. The program is tailored to meet the theoretical as well as applied concepts in preparing students to serve individuals and families of various ages, physical abilities, and income levels.

Specialization Requirements 23
Consumer Economics and Family Management 320, 351, 370 7
Child and Family 227, 366 6
Health Education 330 3
Food and Nutrition 100 3
Social Work 383 4
Recommended Electives 32
Economics 304; Consumer Economics and Family Management 331, 430; GE-E 236; Black American Studies 330; Psychology 307; Social Work 375, 401, 402, 463; Sociology 302, 335, 435; GE-A 221, 230, 240, 312; Vocational Education Studies 336, 337; Journalism 340, 341.

Minor in Consumer Studies

The consumer studies minor offered through the Division of Human Development is designed to give students background in consumer economics and home management. The selection of courses is flexible so that course work can be adapted to the special interests of students with diverse goals and backgrounds.

Required courses: Consumer Economics and Family Management 240, 340, and 350; three courses to be selected from the following: Consumer Economics and Family Management 320, 330, 331, 341, 351, 370, 407, 420, 430, 451 and 494.

Courses

240-3 Consumer Resources. An introduction to the resources available to young adults in tackling consumer problems and disputes in housing, automobile care, health services, food purchases, educational expenditures, money management, and other areas of interest to the student. Special attention is given to community and university agencies such as IPIRG, tenant union, chamber of commerce, attorney general's office, and other organizations helpful in resolving problems.
320-2 Household Equipment. Materials, construction, selection, operation, and care of equipment to provide maximum satisfaction to the family are identified. Some emphasis placed on design and use of kitchen and laundry areas.
330-3 Housing. An examination of the physical characteristics of housing as they relate to family needs, wants, and capabilities, as well as the social and economic factors which affect satisfaction associated with family shelter. Field trip.
331-3 Human Environment and Living Space. A study of the living spaces of homes and the relationship of these spaces to the social, economic and aesthetic needs of humans.
340-3 Consumer Problems. Study of family income and expenditure patterns, selection of commodities and services, and an analysis of consumer protection devices.
341-3 Consumers and the Market. The impact of market and governmental activities on consumers' decision-making. Analysis and evaluation of programs designed to inform and to protect consumers.
350-3 Management of Family Resources. A study of factors affecting the management of the home in meeting needs of individuals and creating a satisfying environment for the family. Special consideration given to management of time, money and energy resources.
351-2 Home Management Practicum. Analysis of current management situations and family resources use with practical application of basic principles. Additional costs required. Prerequisite: 350 and consent of chairperson.
370-3 Management for Low-Income Families. Job-oriented course for social welfare careers; selected concepts in family economics and management with application to the low-income family.
380-2 to 6 Special Problems. Selection and investigation of a special problem under personal supervision of departmental faculty, approved by chairperson and instructor. Every semester.
407-1 to 3 Workshop. Designed to aid workers in professions related to use of family resources. Emphasis for each workshop will be stated in the announcement of the course. Every semester.
420-3 Trends in Household Equipment. Design, function, principles of operation, current trends, and ecological problems related to equipment use in household and society are considered. Prerequisite: 320.
430-3 Housing Alternatives. Selected aspects of the housing market and their relationship to changing life styles of households. Structure, operations and performance of the

housing market and home building industry, housing finance, and contemporary housing problems and issues are considered. Fall Semester. Prerequisite: 330 or consent of instructor.
445-3 Family Financial Management. Developments in family financial management and the evaluation of methods and procedures for helping families, with emphasis on the role of the consultant. Case studies and simulation, as well as field problems, are included. Fall semester and alternate summers. Prerequisite: 340 and 350, equivalent, or consent of instructor.
451-3 Household Activity Analysis. A study of work methods and place, as well as the characteristics of the worker, in relation to solving problems of employed, full-time, and handicapped home managers.
480-3 Women in the Home and Labor Market. (Same as Women's Studies 488). An evaluation and interpretation of the economic contributions of women in household production and in the labor market. Related issues such as fair employment practices, role conflicts, and legal issues will be considered.
494-1 to 4 Field Experience. Supervised learning experiences in an acceptable employment area. Every semester. Prerequisite: 370 and consent of chairperson.
499-1 Senior Seminar. A study of contemporary issues in the field of family economics and management including the concerns of new professionals entering the field. Not for graduate credit.
530-3 Societal Factors in Housing.
535-3 Housing Consumption.
540-3 Consumption Trends.
550-3 Advanced Home Management.

Curriculum, Instruction, and Media (Department, Majors, Minors [Educational Media, Child and Family], Courses)

The Department of Curriculum, Instruction, and Media offers a major in early childhood education with two specializations: preschool (0-6) and kindergarten through third grade, a major in child and family, a major in elementary education, and minors in child and family and educational media; offers courses for students pursuing the standard high school certification program, including a major in language arts (English and reading) and a major in social studies. The department offers programs to prepare students to qualify for the following Illinois teaching certificates: Early Childhood Certificate (for teaching ages 0-6); Standard Elementary Certificate (for teaching in grades K-9); or Standard High School Certificate (for teaching in grades 6-12). Students may enter the department (1) directly from within the College of Education, (2) from the General Education program, (3) from other academic units, or (4) from other institutions of higher education.

Early Childhood Education Major

This program encompasses the professional training needed to assume a variety of roles such as infant development specialists; child life practitioners; early childhood teachers and administrators; teacher and parent educators; family service workers; and teaching young children in elementary schools.

EARLY CHILDHOOD EDUCATION MAJOR — PRESCHOOL SPECIALIZATION

Students interested in teaching children 0-6 years of age in private or state-approved settings may elect to participate in the early childhood education major leading to preschool certification. Specifically designed to prepare future teachers of children under six, this program will lead to the State of Illinois Early Childhood Certificate. Students wishing to teach public school kindergarten are directed to the K-3 specialization program.

There are sequential steps for admission and retention in the early childhood education major with preschool specialization program,

1. Completion of Curriculum, Instruction, and Media 209, 240, and 245 with a grade of *C* or better, an overall grade point average of 2.25, and a favorable vote

of the early childhood faculty based on the student's performance in the above courses.

2. To be eligible for field experience, a student must have attained a minimum overall grade point average of 2.50, successfully completed Curriculum, Instruction, and Media 209, 227, 237, 240, 245, 317, 318, 319, 337, 456, 466: Education 312, Special Education 400 and 412; have made preliminary application for field experience; and be approved by the coordinator of the early childhood major based on performance in the above courses. Applications for field experience must be submitted within the first two weeks of the semester during which the student is enrolled in Curriculum, Instruction, and Media 319.

General Education Requirements	45
Including GE-B 202; GE-B 212 or 301; GE-C 100 and an art class; GE-D 101, GE-D 117 or 119; GE-E 201 and Physical Education activity class.	
Requirements for Major in Early Childhood Education with Preschool Specialization	70
Curriculum, Instruction, and Media 209, 213, 227, 237, 240, 245, 317, 318, 319, 337, 404, 414, 418, 419, 435	41
Education 312, 401[1]	11
Food and Nutrition 100	3
Music 303	3
Psychology 301	3
Special Education 400, 412	6
Speech Communication 444	3
Electives	13
Selected to meet general education requirements for certification	
Total	128

[1]During the field experience semester a student may enroll in Education 401 *and no more* than six additional hours of credit or two additional courses. A four hour block of time is required each day during the field experience semester. Morning placements are to be expected and planned for. Education 401 must be supervised by the coordinator for field experience.

Students wishing further enrichment in special education, infant development, administration of programs, and family studies should contact their adviser for a list of recommended courses.

EARLY CHILDHOOD EDUCATION MAJOR — KINDERGARTEN THROUGH GRADE THREE SPECIALIZATION

In the early childhood education kindergarten through grade 3 specialization program, special emphasis is placed on teaching young children in the elementary school. This major leads to the State of Illinois Standard Elementary Certificate.

In order to qualify for retention in the teacher education program, students must have completed two Curriculum, Instruction and Media courses with a *C* or higher grade, attained a grade point average of at least 2.40 and have favorable majority vote of the early childhood education faculty on the basis of professional competencies.

General Education Requirements and Additional General Education Requirements for Major	75
Physical and Biological Sciences (GE-A)	11
Social Sciences (Including GE-B 202 and 301, other GE-B courses)	11
Fine Arts (Including GE-C 100, 101, or 205. Music 101 or two levels of Music 030; Music 300; and Art 348	14
Language Arts (Including GE-D 101; 117 or 119; GE-D speech	

and GE-C literature) 16
Mathematics (Including Mathematics 114 or equivalent to substitute for GE-D 107 and Mathematics 314) 7
Health and Physical Education (Including GE-E courses and Physical Education 202) 7
Electives (Curriculum, Instruction, and Media 427 recommended)[1] .. 9
Professional Education Requirements 25
See Teacher Education Program, page 66.
Specialization Requirements for Major 24
Curriculum, Instruction, and Media 213, 312, 315, 316, 324, 423, 426, 435[1], Vocational Education Studies 368
Electives 4
Must be taken in Curriculum, Instruction, and Media: recommended are 402, 407e or 407f and 419
Total 128

[1]Applies as a general education certification requirement for major.

Child and Family Major

This program offers basic background leading to positions as nursery school director or teacher in private schools, colleges and universities, and day care centers; director or teacher in residential living facilities for exceptional children; child care specialists with social, public health and welfare agencies; home economics extension specialist in child care; and recreational leaders.

General Education Requirements 45
Including GE-B 108 and 202, GE-D 152
Requirements for Major in Child and Family 40
Curriculum, Instruction, and Media 227, 237, 317, 318, 319, 327, 337, 404, 414, 417, 498-6, Education 312 37
Food and Nutrition 100 or 490 3
Electives 35
Recommended for Preschool Director and Teachers: Curriculum, Instruction, and Media 390h 453, 455, 498h; Botany 390; Art 348; Physical Education 202; Special Education 400; Psychology 301; Music 303.
Recommended for Child/Family Care Specialists in Social Services: Psychology 305; Social Work 375, 383, 391; Special Education 400; Sociology 426; Curriculum, Instruction, and Media 390h, 498h.
Recommended for Residential Life Directors and Supervisors: Health Education 334; Special Education 400, 401, 402, 403; Communication Disorders and Sciences 104, 316; Music 302; Recreation 300; Social Work 375, 383; Psychology 301, 451.
Recommended for Infant Care Specialists: GE-A 115, GE-B 262; Curriculum, Instruction, and Media 405; Health Education 334; Psychology 301.
Total 120

Elementary Education Major

A Bachelor of Science degree with a major in elementary education entitles the student to apply for the State of Illinois Standard Elementary Certificate, which will allow the holder to teach in kindergarten through ninth grade.

Elementary education majors may select either an area of interest consisting of eight semester hours of electives in science, language arts, social studies, mathe-

matics, language other than English, multicultural studies, educational media, the arts, physical education, or environmental education.

In order to qualify for retention in the teacher education program, students must have completed two Curriculum, Instruction and Media courses with a *C* or higher grade, attained a grade point average of at least 2.20 and have favorable majority vote of the elementary education faculty on the basis of professional competencies.

General Education Requirements and Additional General Education Requirements for Major	67
Physical and Biological Sciences (GE-A)	11
Social Studies (Including GE-B 202, 212, and 301)	11
Fine Arts (Including GE-C 100, 101, or 205; must include one music and one art course, which may be taken as part of GE-C)	9
Language Arts (Including GE-D 101; 117 or 119; GE-D speech and GE-C literature)	16
Mathematics (Including Mathematics 114 or equivalent to substitute for GE-D 107 and Mathematics 314)	7
Health and Physical Education (GE-E)	5
Electives (May be taken from electives cited under specialization requirements to further enhance and support this area)	8
Professional Education Requirements	25
See Teacher Education Program, page 66.	
Specialization Requirements for Major	26
Curriculum, Instruction, and Media 312, 315, 423, 424, 426, 435[2]	18
Electives	8[1]
Electives to be selected from one of the following areas: science, language arts, social studies, mathematics, language other than English, multicultural studies, educational media, the arts, physical education, or environmental education	
Electives[3] (eight hours must be in Curriculum, Instruction, and Media courses)	10
Total	128

[1]Elective hours from general education may apply; combined total must equal 16 hours.
[2]Applied as a general education certification requirement for major.
[3]Many states require a course on special needs learners and two courses in reading methods. Two courses in reading are required for teaching in Chicago schools.

Majors To Prepare For Secondary School Teaching

Students who elect to pursue a Bachelor of Science degree in the College of Education, for purposes of preparing to teach in junior or senior high schools, should select academic majors and minors from the areas included in the listing below. Included in the column headed Major are those areas for which Southern Illinois University at Carbondale has approval from the State of Illinois Office of Education and from the State Teacher Certification Board.

TEACHING AREA	MAJOR	MINOR[1]
Agricultural Education[2]	X	
Art	X	
Biological Sciences	X	X
Black American Studies		X
Botany[3]	X	X
Business Education[2]	X	X

Chemistry	X	X
Earth Science		X
Economics		X
Educational Media		X
English	X	X
Foreign Languages[4]	X	X
Geography	X	X
Health Education	X	
History	X	X
Home Economics Education[2]	X	
Language Arts (English and Reading)	X	
Mathematics	X	X
Microbiology		X
Music	X	X
Occupational Education (Industrial Arts and Trades and Industries)[2]	X	
Philosophy		X
Physical Education	X	X
Physics	X	X
Physiology		X
Political Science	X	X
Psychology		X
Social Studies	X	
Sociology		X
Speech Communication	X	X
Theater		X
Zoology[3]	X	X

[1]All minors used for certification purposes must include a minimum of 18 semester hours.
[2]Requirements for programs in agricultural education, business education, home economics education, and occupational education may be found in the catalog section titled Vocational Education Studies.
[3]A student with a major in botany or zoology should have a minor in the other in order to meet certification standards for teaching biology at the high school level.
[4]Majors and minors are offered in the specific languages. The student should consult the academic adviser for information concerning the majors and minors available.

Each student who wishes to apply for the Standard High School Certificate through the certification entitlement process at Southern Illinois University at Carbondale must fulfill the following requirements of the University's Teacher Education Program:

1. The individual must have completed a baccalaureate program at Southern Illinois University at Carbondale.
2. The individual must have completed one of the approved majors included in the previous listing.
3. The individual must have fulfilled requirements for certification related to the state and federal constitutions and an American government or American history course by either (a) taking GE-B 212 or 301 or History 300; (b) taking a course in American history or political science other than those listed in (a), above, and passing the constitution test administered by Southern Illinois University at Carbondale; (c) presenting written notification from another institution that a course in American history or political science has been passed and that the Illinois and United States Constitutions tests have been passed.
4. The individual must have fulfilled certification requirements in health and physical education which can be satisfied by taking GE-E 201 and two hours in GE-E 100-114 courses.
5. The individual must have completed the following sequence of professional education courses with a grade of *C* or better.

Professional Education Sequence 25
Decision Component
Education 201[1] 1
Basic Professional Block
Education 301 2
Education 302 2
Education 303 2
Education 304a, b, c, d, e, f, g, or h 2
Education 312[3] 1
Professional Semester[2]
Education 350 3
Education 400 4
Education 401 8

[1]Must be completed prior to admission to the teacher education program.
[2]See catalog section titled Professional Education Experience for prerequisite for student teaching in the professional semester.
[3]The following courses are approved substitutes for Education 312 as a part of the professional education requirements for the majors indicated: Music 304 and 306 for music majors; Speech Communication 230 and 390 for speech majors; and Communications Dosorders and Sciences 105 and 493 for communication disorders and sciences majors.

6. The individual must have completed a special methods course pertaining to the major.
7. The individual must have fulfilled State Teacher Certification Board general education distributions in the required areas: language arts, science, mathematics, social studies, humanities, health and physical education.

Students who wish to prepare to teach in middle school or junior high schools should inform their advisers of this interest early so they can include in their programs those courses which will prepare them for teaching in that area. The student's electives should be planned to include course work in a subject matter area of major interest to the student.

Language Arts (English and Reading) [Major]

This program is designed to meet the needs of students who wish to teach English language arts (including reading) at the junior/middle school level, or who wish to teach high school students whose language skills are not up to high school level. The graduate of this program will be qualified to work with the language skills development which is crucial during early and middle adolescence. To develop such qualifications, students in the program learn how language skills are developed, the characteristics of the early and middle adolescent, and the variety of content, including literature, which can be used with these young people. The student also will gain an understanding of how these components can be integrated in a variety of school and classroom formats.

The content courses provide the substance or building blocks for use in the methodology courses, where teaching strategies are explored and experienced. The clinical experiences provide the guided practice where the student begins practical skill development, synthesizing and applying an understanding of English language arts content, learning and teaching strategies, adolescent behavior, and public school curricular needs.

General Education Requirements 45
Including GE-B 202, 212, and 301; GE-D 117, 118, or 119; GE-D 152 or 153; GE-E 201, 2 semester hours of Physical Education activity course.
Requirements for Major in Language Arts (English and Reading)[1] ..... 45[2]

GE-C 200 ..... (3)
English 290 or 390, 300, 302a or 302b, 309, 365, 481, 485 21
Curriculum, Instruction, and Media 361, 445, 407f, 423, 462 15
Electives 9
Electives representing a maximum of 6 hours in any one category:
Curriculum, Instruction, and Media 393c,f, 407c, 402, 464.
Speech Communication 430; Speech Communication 465 or Philosophy 425; or Speech Communication course beyond 200.
Theater 410.
One of: English 281, 282, 283; Curriculum, Instruction, and Media 410.
Linguistics (course deemed appropriate by adviser).

Professional Education Requirements 25
See Teacher Education Program, page 66.
Electives 5
Total 120

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[1] In order to qualify for the professional semester assignment, students must have a grade point average of at least 2.25 in the major.
[2] Although the hours shown in parentheses are required for the major, they will also count toward the 45-hour requirement in General Education.

Social Studies (Major)

This program is designed to meet the needs of students who wish to teach social studies in the middle/junior high school or the senior high school. The graduate of this program will be qualified to teach social studies, history, political science, geography, sociology, and economics, based on requirements of the Illinois State Teacher Certification Board.

The complex nature of our competitive, pluralistic society mandates social studies curricula which prepare future citizens to comprehend and adjust to a changing social environment. The goal of the social studies program is to prepare prospective social studies teachers for the role of leadership in guiding middle school, junior, and senior high school students to live as effective citizens in a democratic society.

Content and professional course work provide the foundation used in the social studies methods course, where teaching methods and strategies are explored and experienced. A series of clinical experiences provide the social studies major an opportunity to use the knowledge and skills acquired in the program. A cooperative teaching and university supervisor will assist the student blend knowledge and skills with adolescent behavior and curriculum needs.

General Education Requirements 45
Including GE-D 101 and 117, 118, or 119; 4 semester hours of mathematics; 2 semester hours of speech or other oral communications; GE-E 201; 2 semester hours of physical education activity courses; one GE-C literature course
Requirements for Major in Social Studies ..... 50[1]
GE-B 301, History 300, U.S. history elective ..... (3) + 6
History 205a, 205b, world history, plus 3 hours at the 300 or 400 level 9
Economics 214, 215. economics elective 9
GE-B 212, Political Science 213, political science elective ..... (3) + 6
GE-A 330, Geography 300, geography elective ..... (3) + 5
GE-B 104, 202, Sociology 301 ..... (6) + 4
Electives to be chosen from one of the three departments of anthropology, psychology, or sociology 8

Curriculum, Instruction and Media 469 3
Professional Education Requirements 25
See Teacher Education Requirements, page 66.
Total 120

[1]Although the hours shown in parentheses are required for the major, they will also count toward the 45 hour requirement in General Education.

Child and Family (Minor)

The minor in child and family is intended to provide a background that will asssist students in pursuing their career goals or other interests. At least 16 hours of courses are required as follows:
Curriculum, Instruction, and Media, 227, 237 6
Other approved electives in Curriculum Instruction, and Media 10
Students will be expected to honor prerequisites in their selection of courses.

Educational Media (Minor)

Persons trained as teachers may qualify as a school media professional by completing the following courses: Curriculum, Instruction, and Media 438, 439, 440, 442, 435 or 445, and Education 304a. Other courses in the utilization and administration of teaching materials are designed to train both audiovisual coordinators and librarians to become fully qualified educational media specialists who can administer all teaching materials.

Courses

199-1 The Library as an Information Source. Designed to expose undergraduate students to the basic concepts and structures of the library. This would enable students to use their knowledge in completing reading and term paper assignments as well as in gaining confidence for independent work in the library.
209-2 Philosophy of Creativity. The creative process in the developing child. Emphasis will be upon the levels, dimensions, and individuality of creativity as it is manifested, observed, and nurtured in preschool children. (To be taken concurrently with Child and Family 240 and 245 by early childhood preschool majors.)
212-2 Reading College Texts. Textbooks, supplementary materials, and evaluative instruments will be analyzed. Attention will be given to determining usability, feasibility, learnability, and teachability of instructional materials. The following factors will be investigated: content structure and organization, concept density, conceptualization levels, readability, and format.
213-2 Understanding the Elementary School Child. Child development concepts necessary for understanding the elementary school child, with information provided on preschool, primary, and intermediate grade levels.
227-3 Marriage and Family Living. A study of relationships and adjustments in family living, designed largely to help the individual. To help student better understand the recent changes that have occurred in marriage and the family in the United States.
237-3 Early Child Development I. Principles of development and guidance of children as applied to home situations. Directed observations of children from 0 through 6. Understanding the social, emotional, physical, and intellectual development of the preschool child.
240-2 Survey of Careers in Preschool Programs. A survey course to acquaint students with the varied career opportunities, approaches to programming, and professional personnel in working with children under six. Field trips will be taken to area program centers. To be taken concurrently with 209 and 245.
245-3 Professional Development Seminar. Designed with emphasis on realization of one's own potential in wholeness of life pattern and relationships as preparation for work with children, parents, and professional peers. To be taken concurrently with 209 and 240.
258-1 to 4 Credit for Work Experience. This course includes work experiences relevant to the student's major program, such as work in day care centers, teacher's aid in public school, or with federal, state, or local agencies or programs that deal with children. Prerequisite: 12 semester hours completed with a grade of *B* or better in the student's major area of concentration in the CIM department and consent of undergraduate affairs committee, Department of Curriculum, Instruction, and Media.
312-3 Teaching Reading in the Elementary School. Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis on the formula-

tion of a philosophy of reading and its implications in relation to methods, materials, organizational procedures, and evaluation techniques.

315-3 Teaching Mathematics in the Elementary School. Objectives of mathematics education, learning theory as it is related to mathematics, major concepts to be taught, modern approaches to instruction, with emphasis on the use of concrete learning aids. Four class hours and two laboratory hours per week. Prerequisite: Mathematics 114 and 314, or consent of instructor.

316-2 Early Childhood Education Methods and Curriculum (K-3). Philosophy and principles underlying the teaching of four-to-eight-year olds. Emphasis upon organization, equipment, materials, and methods for promoting growth of young children. Prerequisite: concurrent enrollment in Education 302.

317-3 Instructional Materials and Activities for Preschool. Provides opportunities to acquire a working knowledge of the purposes of the various types of preschool centers; the roles of the personnel; basic teaching skills; curriculum areas, including objectives, activities, and evaluation; and basis for parent-teacher communication.

318-2 Early Childhood (Preschool) Curriculum I. Understanding the role of the teacher in integrating the principles underlying child development with the natural interests and activities of the preschool child through the use of equipment, materials, and educational methods. Emphasis will be on language and affective development. Concurrent enrollment in one hour of Education 302 is required in order to provide practical experiences in a preschool setting one half day per week. Prerequisite: 209, 240.

319-2 Early Childhood (Preschool) Curriculum II. Diagnosing factors in the preschool learning situation, prescribing learning experiences, assessing effectiveness of learning and developing inquiry. Emphasis on cognitive and psycho-motor development. Concurrent enrollment in two hours of Education 302 is required in order to provide one day or two one-half days of practical experience per week in a preschool setting. Prerequisite: 318.

324-2 Early Childhood Social Learning Methods. The objectives, procedures, and methods of designing and implementing social learning environments for early childhood education programs; including an overview of significant early social learning theory and practice. Two hour block required for practicum experiences.

327-3 Family Studies. Study of changing patterns in family living throughout the family life cycle. Insights into common current family problems typical of each stage of the family life cycle. Prerequisite: 227.

337-3 Early Child Development II. The specific behaviors of both parents and teachers are examined to determine the effect they have on the development of the preschool child's desirable and undesirable behavior. Prerequisite: 237.

361-3 Teaching Reading in High School. A foundation course in how to teach reading in junior and senior high school; developmental and remedial reading programs; appraisal of reading abilities; methods and materials of instruction in the content areas.

390-1 to 3 Readings. In-depth reading in various areas of education as related to the fields of (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood education, (i) Elementary education, (m) Instruction, (n) Educational media, (q) Family Studies. Prerequisite: consent of instructor.

393-1 to 6 Individual Research in Education. The selection, investigation, and writing of a research topic under the personal supervision of a member of the departmental staff in one of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood education, (i) Elementary education, (m) Instruction, (n) Educational media, and (o) Environmental education, (q) Family Studies. Maximum of 6 hours to be counted toward a bachelor's degree. Prerequisite: consent of instructor.

400-2 Simulation and Gaming. The role of simulation and gaming in instruction, the availability of commercial games and simulation devices, and the theoretical backgrounds used in constructing teacher-made games are to be examined.

402-3 Education for Disadvantaged and Culturally Different Students. The student examines the characteristics of behavior and learning patterns of culturally different and socioeconomically disadvantaged children. Content also includes school adjustment, experiential background, self-concept, language development, and appropriate teacher behaviors and teachings strategies.

404-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field experiences. Prerequisite: 237 or Psychology 301 or equivalent.

405-3 Infant Stimulation and Care. Application of theories in infant development in care and stimulation practicum. Development of competencies and skills needed by infant specialists and professionals. Two hours seminar, 4 hours practicum. Prerequisite: 404 or concurrent enrollment.

407-3 to 9 (3 per topic) Diagnostic and Corrective Techniques for the Classroom Teacher. A presentation of diagnostic and remediation techniques with emphasis placed on appropri-

ate methods and materials to be used in classrooms in the areas of (c) Language arts, (e) Mathematics, and (f) Reading. Prerequisite: special methods course in field selected by student and/or consent of instructor.

409-3 Creative Teaching. To assist pre- and in-service teachers in acquiring methods and materials that will improve instruction in the public school classroom, with special attention to the characteristics and needs of students. Prerequisite: Education 302.

410-2 Creative Writing in the Public School. Techniques of encouraging creative writings in the schools.

412-3 to 15 (3 per topic) Improvement of Instruction in Early Childhood Education (Preschool-Grade 3). Examines recent findings, current practices, and materials used in early childhood education in the fields of (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, and (g) Social studies. Prerequisite: specialized methods course for the field of study selected by the student.

414-3 Practicum in Parent-Child Study. Designed to increase student's ability to work with parents and parent groups through an awareness of factors in the parent-child relationship and knowledge of current research and methods in parent education. Integration with infant and child development laboratories and related field experience. Prerequisite: 227, 237, or equivalent.

415-3 Modern Approaches to Teaching Middle School Mathematics (Grades 4-8). Examines current mathematics materials and teaching approaches. Hands-on experience with a multitude of teaching aids including microcomputers and problem solving materials. Student exchange of ideas and discussion of activities for classroom use. Prerequisite: 315 or consent of instructor.

417-3 Administration of Pre-School Programs. Planning and organizing programs for preschool or residential facilities including budgeting, staffing, programming, and evaluation. Prerequisite: 318 and 319.

418-3 History and Philosophy of Early Childhood Education. A survey of the history and philosophies of early childhood education with its implication for current program practices. Students' analysis of their personal philosophy of early childhood education. Prerequisite: 316, 318, senior or graduate standing.

419-3 Parent Involvement in Education. Materials, techniques, and resources suitable for use by teachers in helping parents and teachers to understand how they can help each other in the partnership responsibilities of the education of children from a variety of backgrounds. Prerequisite: 317, student teaching, or consent of instructor.

420-3 Teaching the Adult Functional Illiterate. The emphasis in the course will be on understanding the problems of the individual whose literacy level does not permit full participation in the economic, social, and civic opportunities available to the majority of citizens. Prerequisite: permission of instructor.

423-3 Teaching Elementary School English Language Arts. Oral and written communication processes with emphasis on the structure and process of the English language arts in the elementary school. Specific attention to the fundamentals of speaking English, writing, spelling, and listening. Study of learning materials, specialized equipment and resources.

424-3 Teaching Elementary School Social Studies. Emphasis on the structure and process of teaching social studies in the elementary school setting. Specific attention to the fundamentals of developing social studies objectives, planning units, developing a general teaching model, organizing the curriculum, and evaluating behavioral change. Study of learning materials, specialized equipment, and resources.

426-3 An Introduction to Teaching Elementary School Science. Content and methods of elementary school sciences, grades K-8. Emphasis on the materials and strategies for using both traditional and modern techniques of science education. One or more field trips.

427-4 Science Process and Concepts for Teachers of Grades N-8. (Same as Botany 462.) Specifically designed to develop those cognitive processes and concepts needed by elementary school teachers in the teaching of modern science programs. Lecture three hours per week, laboratory two hours per week. One or two additional field trips required.

435-3 Literature for Children. Studies types of literature; analysis of literary qualities; selection and presentation of books and other media for children; and, integration of literature in preschool, elementary, and library settings.

436-1 Bibliography and Literature of Education. Introduction to the use of library resources for research in education. Includes bibliographies in education, the periodical literature, Office of Education publications, dissertation and thesis indexing services, and the Educational Resources Information Center (ERIC) materials. Students will learn to search the literature in preparation for literature review and will compile bibliographies in their own fields of interest.

437-3 Educational Media in Training Programs in Business and Industry. For those persons interested in the role that media plays in current training practices in business and industry. Emphasis is directed toward an understanding of the rationale for using media, a review of the various methods ulitized in training programs, an examination of current training media, and a description of methods used to measure and evaluate the effec-

tiveness of training media. Includes an examination of the roles of professionals who develop media for training.

438-3 Introduction to Technical Services. Organization of library materials. Emphasis on cataloging and classification. Includes acquisition, processing, and circulation of materials. The Dewey Decimal classification system and Sears list of subject headings are stressed. Laboratory assignments.

439-3 Basic Reference Sources. Introduction to the principles and methods of reference work. Concentration on the study and examination of the tools which form the basic reference collection of the school and the community college library.

440-3 Selection of Media. Evaluation of print and non-print media; resources and services; competencies for efficient purchasing and selecting of media. Includes selection principles and problems for elementary, secondary, and community college libraries.

442-4 Administration of the School Media Program. Functions and management of elementary and secondary school library media programs with emphasis on services, personnel, financial aspects, facilities, and evaluation. Current issues and trends as reflected in the literature. Field trips to school library media centers.

445-3 Media for Young People. The selection and use of books and other educational media for students in the junior high and senior high school.

450-3 Photography for Teachers. Photography as a tool of communication in the modern school. Techniques of camera handling, visually planning a story, macro-photography, and color slides. A $10 laboratory fee is required.

451-3 Photographic Preparation of Educational Media. Techniques of photography used in producing prints, overhead transparencies, daylight slides, high contrast materials, picture stories, filmstrips, and other photographic instructional materials. Prerequisite: 450 or consent of instructor. A $10 laboratory fee is required.

453-3 Production of Educational Media I. Principles, skills, and techniques in the design and production of basic nonphotographic educational media. Experience includes applying lettering, coloring, and mounting techniques to projected and nonprojected media. A $10 laboratory fee is required.

455-3 Organization and Production of Media for Self-Instruction. The study of various programming techniques and the procedures used in producing, designing, and evaluating materials used for self-instructional purposes. Includes organizing a teaching segment and producing the needed materials to create a self-instrumental package.

458-3 Classroom Teaching with Television. Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV, and definition of responsibilities are included. Demonstration and a tour of production facilities are provided.

462-3 Middle and Junior High School Programs. Focuses on the development of middle and junior high school curriculum and the identification of instructional activities which relate to the pre and early adolescent student. It is anticipated that the student will be able to plan and develop teaching units and evaluate procedures complementary to this portion of the school structure.

464-2 Student Activities. Analysis of extra-class activities and programs in public schools with a focus on the status, trends, organization, administration, and problems.

465-3 Advanced Teaching Methods. The focus is on a variety of teaching methods and strategies which are appropriate for secondary and/or post-secondary educators. Both individual and group methods are emphasized.

468-3 Science Methods for Junior and Senior High Schools. A performance-based approach to instructional skills common to teaching natural science at the junior and senior high school levels. Three class hours and one micro teaching laboratory hour per week. Prerequisite: Education 302 or consent of instructor.

469-3 Teaching Social Studies in the Secondary School. Emphasis is placed upon instructional strategies and curricular designs in social studies at the junior and senior high school levels.

481-3 Instructional Applications of Mainframe Computers. Design, development, and programming of computer-assisted instructional materials using interacive, timesharing computer systems. Study of lesson design and programming, including branching and program flow, display techniques, response judging, teaching strategies, organization, and style.

483-3 Instructional Applications of Microcomputers. A study of the history, development, and use of microcomputers and microcomputer systems in education. Emphasis is upon the characteristics, capabilities, applications, and implications of microcomputers and microcomputer lessons with case studies of their integration into the teaching learning process.

495-2 to 8 Field Experience. Supervised learning experiences in community nursery schools and public agencies. Eight hours maximum for students enrolled in preschool certification specialization only. Other students limited to an enrollment of six hours maximum. Prerequisite: consent of instructor.

496-2 to 6 (2 to 4 per semester) Field Study Abroad. Orientation and study before travel,

readings, reports, and planned travel. Includes visits to cultural and educational institutions. Maximum credit hours in any term is 4.

498-1 to 15 (1 to 3 per topic) Workshops in Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices in each of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood education, (i) Elementary Education, (j) The middle school, (k) Secondary education, (l) Disadvantaged children and youth, (m) Instruction, (n) Educational media, and (o) Environmental education. (p) Children's Literature, (q) Family Studies. Maximum of six hours toward a master's degree. Prerequisite: consent of instructor.

500-3 Introduction to Research Methods in Education.
501-3 Organization and Administration of Reading Programs.
504-3 Systematic Approaches to Instruction.
506-3 Professional Services for Diverse Family Structures.
507-3 Impact of Public Intervention on Family Life.
508-3 Supervision of Professional Education Experiences.
509-3 Foundations of Environmental Education.
510-3 Values Education Curriculum.
511-3 Seminar in Psychology of Elementary School Subjects.
512-3 Reading in the Elementary School.
513-3 Kindergarten-Primary Reading.
514-3 The Pre-School Child.
515-3 Advanced Remediation in Mathematics.
517-3 Early Childhood Programs: Organization and Administration.
518-3 Early Childhood Curriculum and Methods.
519-3 Early Child Development Through Home and Preschool.
520-3 The Language Arts in Bilingual Classrooms.
521-8 (4,4) Diagnosis and Correction of Reading Disabilities.
522-3 Teaching Reading Skills to College Students.
523-3 Language Arts in the Elementary School.
524-3 Teaching the Social Studies in the Elementary School.
526-3 Problems in Elementary School Science Education.
527-3 Advanced Family Studies.
531-3 The Elementary School Curriculum.
533-3 Instructional Leadership in Elementary Education.
534-3 Organization of the Elementary School.
538-3 Organization of the Nonbook Collection.
539-3 Reference Services of the Media Program.
540-3 Mass Communication in Education.
542-3 Administration of an Educational Media Center.
543-3 Automation of Information Centers.
544-3 Community College Media Programs.
546-3 The Library of Congress Classification Scheme.
548-3 Production of Educational Media II.
549-2 Designing Multi-Image Learning Materials.
551-3 Survey of Research and Developments in Educational Media.
553-2 Instructional Design.
554-3 Utilization of Educational Media.
555-3 Visual Communication.
560-3 Instructional Television.
561-3 Reading in the Secondary School.
566-3 Instructional Strategies for Problem Solving.
569-3 Principles and Trends in Secondary School Social Studies Education.
571-3 Secondary School Curriculum.
572-2 History and Philosophy of Bilingual/Bicultural Education.
573-3 Perspectives on the Future and Its Schools.
574-2 Psycho- and Sociolinguistic Considerations in A Bilingual/Bicultural Classroom.
580-3 Current Developments in Major Subject Areas in Secondary Schools.
582-3 Advanced Research Methods in Education.
583-3 Instructional Theory, Principles, and Practices.
584-3 Curriculum Theory, Foundations, and Principles.
585-3 to 15 (3 per topic) Seminars in Education.
586-3 Curriculum Design and Development.
587-3 Curriculum Implementation and Evaluation.

589-3 The Work of the Director of Curriculum and Instruction.
590-1 to 15 (1 to 3 per topic) Independent Readings.
593-1 to 15 (1 to 3 per topic) Individual Research in Education.
594-(2 to 9 per topic) Practicum.
595-(2 to 8 per topic) Internship.
596-3 to 6 Independent Investigation.
599-2 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Dental Hygiene (Program, Major, Courses)

This program of study is designed to prepare the student to successfully enter the health profession of dental hygiene. Upon completion of the program, the graduate should be capable of passing the written National Board Examination, and the appropriate State/Regional Board Examination including any clinical and/or written portion.

The primary role of dental hygienists is dental education and prevention of oral disease. Therefore, they must have a basic knowledge of the human body and a detailed knowledge of the oral cavity. The student develops skill, dexterity, and use of judgment in procedures relating to preventive dentistry on clinical patients scheduled in the dental hygiene clinic. Services provided by the dental hygienist are regulated by laws which vary among the states, but all include the services of scaling and polishing teeth, radiographic examination, patient education and nutritional counseling, application of preventive medicaments, administrative procedures, chairside assisting techniques, and some laboratory techniques. All the services performed in the clinic are under the direct supervision of licensed faculty and the supervision of a dentist.

Since the curriculum includes many science courses the entering student should have a thorough background in the basic sciences including chemistry, biology, and general sciences. Facilities limit enrollment to 50 students admitted only in the fall semester. Additional application information and procedures are required other than that required for admission to the University. Additional expenses of approximately $2500 are required to cover the cost of instruments, uniforms, insurance, and other items in addition to textbooks and tuition.

The program is served by an advisory committee made up of practicing dentists and dental hygienists. The committee membership is made up of the following: dean, School of Dental Medicine, Southern Illinois University at Edwardsville; president, Southern Illinois Dental Society; dentist and dental hygienist; Veteran's Administration Hospital, Marion; dentist, Federal Penitentiary, Marion; president, Illinois Dental Association; chief, Division of Dental Health, Department of Public Health, State of Illinois; practicing dentists and dental hygienists, within the state of Illinois; and a student member.

A licensed dental hygienist may be employed in private practice offices, in school systems, in public health, in research, in administration, in government institutions, or as a commissioned officer in the armed services.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale graduating with an Associate in Art degree from the School of Technical Careers. This program is fully accredited by the Commission on Dental Accreditation of the American Dental Association.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Dental Hygiene

GE-A 106 3

GE-B 202, Sociology 321	6
GE-D 101, 152	6
Microbiology 201	4
Allied Health Careers 141	4
Dental Hygiene 126, 133, 137, 138, 147, 201, 208, 209, 211a,b, 217, 218a,b, 226, 238, 240, 241, 248, 310a,b, 311a, b, 315, 348	60
Total	83

Courses

126-3 Oral Anatomy and Tooth Morphology. The student will learn to recognize and identify in detail the structures within the oral cavity including the tongue, salivary glands, lips and cheeks, and cheeks and teeth, both permanent and primary. Laboratory emphasis will be placed on tooth identification, tooth and root morphology, and occlusal relationships to enhance application of instrumentation techniques. Lecture two hours, laboratory two hours.

133-2 Histology and Embryology. The student will learn the microscopic components of the primary tissue groups of the human body and will be expected to identify microscopically in detail, the dental tissues of the oral cavity. The course also enables the student to relate the embryonic development of the head to the normal and abnormal structures of the adult head and oral cavity. Lecture two hours.

137-5 Pre-Clinical Dental Hygiene. The student is introduced to the profession of dentistry with emphasis on the role and duties of a hygienist. Basic skills and techniques of instrumentation will be acquired using manikins in the laboratory followed by clinical experience on selected patients. Included will be didactic instruction in normal and abnormal tissue conditions, the role, function, and structure of hard and soft deposits, and stain. Additional skills, techniques, and procedures include clinical rules and procedures, aseptic technique, oral inspection, rules of professionalism, etc. Lecture two hours, laboratory six hours.

138-2 Oral Pathology. The student will learn to recognize the appearance, causes, and body's responses to pathological conditions including congenital disorders, circulatory, and neurological ailments, tumors, and neoplasms. Pathologic related physiology is also included over area on a cellular level such as tissue regeneration, inflammatory process, and wound healing. Lecture two hours. Prerequisite: Allied Health Careers Specialties 141.

147-1 Preventive Dentistry. The course is designed to introduce the student to basic preventive dentistry measures. Subject matter is presented that is important in the understanding of the causes and means to control dental caries and periodontal disease. Emphasis is placed on assessment of patients' dental needs and planning for patient treatment. Lecture one hour. Prerequisite: 137.

201-4 Dental Materials and Assisting Techniques. The student will study the physical and chemical properties of various dental materials used in dental practice including plaster and stone, impression materials, synthetic resins, metals and cements. In the laboratory the student will manipulate those dental materials and recognize the effects of proper and improper techniques. Emphasis will be placed on dental assisting techniques for both operatory and laboratory in the generalist and specialist type of practices. Lecture three hours. Laboratory three hours. Prerequisite: 209, GE-A 106.

208-4 Clinical Dental Hygiene. The student will continue to apply information and skills learned in 137 on selected patients with varying oral hygiene needs. New information, procedures, and skills will be introduced during the course and incorporated into the clinical procedures. Laboratory eight hours. Prerequisite: 126, 133, 137.

209-3 Dental Hygiene Clinic. The student will perform professional services of a hygienist on designated clinical patients and is expected to demonstrate improvement of skills covered in 137 a,b. Additional skills incorporated into clinical procedures include application of flouride gels, maintenance and sharpening of scaling instruments, recognition and detection of carious lesions, extended or home care education, auxiliary polishing devices, caries etiology tests and nutritional counseling. Laboratory 12 hours, eight weeks. Prerequisite: 208

211-2 (1, 1) Seminar. (a) The course presents to the student procedures and techniques that will be incorporated into concurrent clinic courses including advanced instrumentation and clinical problem solving. Emphasis is placed on patient management and advanced emergency techniques. (b) The course continues to provide correlation between didactic material and clinical application. Emphasis is placed on development of plaque control programs. Lecture two hours. Prerequisite: 137, 147.

217-2 Dental Nutrition. The biologic functions of essential nutrients are studied in their relation to growth and development of dental and oral tissues. Nutrition in health and disease

is considered in detail; food sources of essential nutrients are identified. Knowledge gained is applied to the nutritional management and prevention of dental health problems in clinical practice through dietary counseling. Lecture four hours, eight weeks. Prerequisite: GE-A 106, Allied Health Careers Specialties 141.

218-4 (2, 2) Dental Radiology. **(a)** The student will learn the techniques of exposing, processing, and mounting bitewing and periapical dental x-ray surveys, and will learn how x-rays are produced, hazards and precautions in using x-ray equipment, and the chemical composition and action of processing solutions on x-ray film. In the laboratory, the student will receive individual assistance in learning the techniques of exposing and processing films. (Lecture three hours. Laboratory three hours. Eight weeks.) Prerequisite: 126, 137, GE-A 106. **(b)** The student will learn special dental survey techniques including paralleling, occlusal, and special views, and will identify anatomical landmarks and recognize appearance of pathological conditions as viewed on dental x-rays. In the laboratory the student will receive assistance in learning special survey techniques. Lecture one hour. Laboratory two hours. Must be taken in a,b sequence. Prerequisite: 218a.

226-2 Anatomy of the Head and Neck. The student will study the detailed anatomic structure including skull, muscles, nerves, and blood supply. This course will provide concepts for understanding of anatomic structures of the head and neck and their functional relationships. Lecture two hours. Prerequisite: 126.

238-2 Oral Pathology. Special attention will be placed on pathological conditions of the oral cavity including dental caries, periodontal disorders, and lesions of the hard and soft tissues. The student will apply this knowledge by giving intra and extra oral examinations on selected patients and recording the findings. Lecture two hours. Prerequisite: 138, 226.

240-2 Dental Pharmacology and Anesthesia. The student will recognize the various types of drugs, their actions and effects on tissues of the body. Special emphasis will be placed on those drugs most commonly prescribed by the dentist. The student will study the anesthetics commonly used in a dental office and the techniques of administering them. Lecture two hours. Prerequisite: GE-A 106, Allied Health Careers Specialties 141, Microbiology 201.

241-2 Periodontology. The student will be introduced to the specialty of periodontics, including a review of the topics of classification, etiology, and the treatment of periodontal disease. Clinically, the student will perform a complete examination, scaling and root planing for the periodontal patient as presented in theory in this course. Consideration will also be given to special adaptations and recommendations of oral physiotherapy for the periodontal patient. Prerequisite: 126, 209, 217, 218b, Microbiology 201.

248-2 Dental Public Health and Community Dentistry. The student is introduced to the general principles of dental public health and community dentistry including hierarchy and history of the public health system; dental needs, supply and demand; purchase of dental care; and general principles of research in public health. An overview of types of community dental health programs are studied, with emphasis on the role of the dental hygienist in the community. Lecture two hours. Prerequisite: 147, 208, 209.

310-12 (6, 6) Clinical Dental Hygiene and Radiology. **(a)** The student continues clinical experience and is expected to show improvement in skills and abilities. Additional procedures include application of stannous fluoride, patient control programs, complete charting of the oral cavity, care of dental prosthesis, use of ultrasonic cleaning devices, measurement of periodontal pockets, and maintenance of dental equipment. Additional clinical experience is provided in the Model Cities clinic. Students will continue to take dental radiographs on clinical patients as a part of the required clinical experience. Laboratory twelve hours. Prerequisite: 209, 217, 218b, Microbiology 201. **(b)** The student will continue to perform the professional services of a hygienist on designated clinical patients and will be expected to demonstrate improvement of skills covered in 137 and 209. Those skills incorporated into clinical procedures include application of fluoride gels, maintenance and sharpening of scaling instruments, recognition and detection of carious lesions, extended home care education, auxiliary polishing devices, caries etiology tests, and nutritional counseling. Dental radiographs will be taken on clinical patients as a part of required clinical experience. Laboratory twelve hours. Prerequisite: 209, 310a, concurrent enrollment in 311b.

311-2 (1, 1) Senior Seminar. **(a)** The course presents to the student advanced clinical techniques and provides an opportunity for clinical problem solving. Emphasis in this phase of the course is placed on development of recall systems treating patients with special needs and the use of case presentations. Prerequisite: 211. **(b)** The course focuses on advanced clinical techniques and application. Clinical problem solving is practiced in conjunction with case presentation of actual clinic cases. Emphasis is placed on treatment of patients with special needs, hazards within the dental office, and skills needed for locating employment. Lecture two hours. Prerequisite: 211.

315-2 Ethics, Jurisprudence, and Office Management. The student will be able to identify the rules of conduct and behavior appropriate for dental professionals. Professional ethics and legal responsibilities will be distinguished as two separate topics. Evaluation pro-

cesses will be worked through as in role playing to help students assess the appropriate steps to make professional decisions. Office management will be explored as an alternative career responsibility as well as conventional office procedures. Lecture two hours. Prerequisite: 208, 209, 310a.

348-2 Practicum in Dental Public Health and Community Dentistry. The student will continue to study the principles of dental public health and community dentistry. Types of dental health education programs are studied with emphasis on special population groups. Program planning, implementation, and evaluation are discussed in detail. The student will develop and present dental health education programs according to these principles. Lecture one hour, laboratory two hours. Prerequisite: 248.

Dental Technology (Program, Major, Courses)

The dental technology program prepares the student to be a competent dental technician in the commercial laboratory, an educational institution, a dental manufacturing company, or the private dental office. To implement the goal, the prospective student must satisfactorily meet the requirements of courses in both the dental technology area and in the science, business, and humanities area.

Persons interested in careers in dental technology should have a sincere interest in working with their hands and find satisfaction in their creative work.

Enrollment of beginning students is limited by size of faculty and physical facilities with new students admitted only in the fall semester. Additional application information is required other than that required for admission to the University.

An advisory committee whose members are drawn from the profession and from educational institutions serves the program. Current members are: Michael Durr, DDS, Carbondale, IL.; Sam Bono, dental technician, Florissant, Mo., Tilghman S. Tade, CDT, Tade Dental Laboratory, Belleville; Jim Snodsmith, CDT, Snodsmith Dental Laboratory, Mt. Vernon; William Cotton, DDS, Temple University, Philadelphia, Pa.; Gilbert Zoeller, DDS, Southern Illinois University Dental School, Alton; Dan Sullivan, Williams Gold Company, Kirkwood, Mo.; and Todd Toepper. TNT Dental Laboratory, Janesville, Wisc.

Graduates of the two-year dental technology program find that career opportunities are excellent. The trained dental technician not only has a wide choice of geographic location for the pursuit of a career, but can also choose working conditions. Graduates are employed by commercial dental laboratories, dental schools, dental supply companies, private dental offices, or are self-employed in their own dental laboratories.

The student should expect to spend about $700 for a dental kit, laboratory jacket, and Delta Tau Club, and recognized graduate exam fee over the two-year period.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Dental Technology

GE-D 101, 152	6
GE-A 101, 106	6
School of Technical Careers 102, 120	5
Dental Technology 102, 103a,b 104a,b, 106, 113a,b, 128, 143, 200, 204a,b, 205, 206a,b, 210	61
Total	78

Courses

102-4.5 Tooth Anatomy Theory and Laboratory. The student will be able to write defini-

tions on the nomenclature of teeth and their supportive structures; draw five different peripheral views of maxillary and mandibular teeth; carve maxillary and mandibular teeth in plaster, three times natural size and in wax, natural size. Lecture three hours. Laboratory 17 hours. Five weeks.

103A-4.5 Complete Dentures Theory and Laboratory. The student will be able to: write the steps of denture construction; identify and use impression materials, lab stone and lab plaster, acrylic resins, and articulators, namely the Hanau Model H and Whip-Mix; construct edentulous casts, individual trays, base plates, occlusal rims; and mount casts on the above named articulators. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 105.

103B-4.5 Advanced Complete Dentures Theory and Laboratory. The student will be able to: describe the theory inherent in all phases of full denture construction; set up teeth on the Hanau, Whip-Mix, and Simplex articulators; select and set teeth for different classes of arch forms; wax, invest, process and finish full dentures; rebase, reline, duplicate, and repair full dentures. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103A.

104A-4.5 Removable Partial Dentures Theory and Laboratory. The student will be able to: write the basic steps of partial denture construction, identify and use impression materials, laboratory stones, plaster, surveyors, waxes, and different types of forms of artificial teeth; construct and mount master casts, survey and design partial denture cases, and arrange teeth. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 103B.

104B-4.5 Advanced Removable Partial Denture Theory and Laboratory. The student will be able to: describe and do the planning, designing, and surveying of partial dentures; construct a refractory cast, wax, invest, and finish partial denture frameworks; set up artificial teeth on the partial frames; and repair broken partial. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 104A.

106-4.5 Dental Orthodontics and Pedodontics. The successful student will be able to fabricate a maxillary hawley, a mandibular hawley, holding arch, share maintainer, suture opener, tongue spikes, tongue crib, occlusal-palatal splint, space regainer, stabilizing plate, and bite planes and obturator; operate the soldering machine and equipment associated with it; write the gauges of wires that are used for the othodontic appliances; and write the theory that is associated with the fabrication of the above named appliances. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 104b.

113A-2 Science of Dental Materials. The student will be able to: identify orally, as well as written, the uses and composition of dental gypsum products, namely, plaster, stones, and investments, impression materials, dental resins, dental cements, polishing agents, abrasives, and dental waxes. Lecture two hours.

113B-2 Science of Dental Materials. The student will be able to identify orally, as well as written, the physical and mechanical properties of metals and alloys, namely, dental golds, chrome cobalt alloys, and nickel cobalt alloys; the control of their physical properties, namely, strain hardening, alloying and heat treatment, the chemistry of tarnish and corrosion, gypsum investments for inlay procedures, casting and soldering techniques, and dental porcelains. Lecture two hours.

128-1 Oral Anatomy. The student will be able to identify the anatomical features of the head and oral cavity; identify the blood and nerve supply to the oral cavity and area; be able to list the muscles of mastication, and know the origin and insertion of each muscle; identify the anatomical parts of the maxilla and mandibule; differentiate the movements of the mandibule; and be able to identify the temporamandibular articulations. Lecture one hour.

143-1 Orientation to Dental Technology. The student will be able to identify pertinent dates and contributions made by people in the history of dentistry and the dental laboratory industry; identify specialties of dentistry and dental technology; identify organizations affiliated with the dental laboratory industry, identify ethics and laws regulating the dental profession, identify laboratory safety procedures, equipment maintenance and areas of possible cross contamination in the dental laboratory, and identify current issues of dentistry.

200-4.5 Dental Occlusion. The successful student will be able to draw peripheral views of maxillary and mandibular teeth, and identify the occlusal anatomy; write and identify the functions of the muscles of mastication including origins and insertions; write and identify the anatomy and function of the tempromandibular joint including ligaments; write and identify the nomenclature of occlusion; write and identify the theory inherent in occlusion; wax a maxillary and mandibular quadrant in cusp marginal ridge occlusion and cusp fossa occlusion; and wax a natural full mount rehabilatation case using the principles of occlusion discussed in lecture. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 102.

204A-4.5 Beginning Crown and Bridge Theory and Laboratory. The student will be able to: write the definitions of the nomenclature of beginning crown and bridge prosthetics;

communicate orally, as well as written, the theory that is necessary for successful completion of the laboratory projects; construct amalgam, stone and copper plated dies; construct master and working casts; construct full and veneer crown, acrylic jackets, inlays and onlays; and operate and maintain crown and bridge laboratory equipment. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 203.

204B-4.5 Advanced Crown and Bridge Theory and Laboratory. The student will be able to: write definitions of the nomenclature of advanced crown and bridge; identify soldering and heat treatment techniques; differentiate between different types of pontics, waxing, venting, and sprueing techniques; write the theory inherent in broken stress bridgework, Steele's facing bridgework, telescope bridgework, and cantilever bridgework; list and perform techniques in crown and bridge repair; identify causes and remedies for porosity, open margins, and general casting failure in crown and bridge construction; and, construct a six-unit maxillary Steele's facing bridge, a five-unit broken stress bridge, and an eight unit telescope bridge. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 204A.

205-1 Dental Laboratory Management. The student will be able to identify how the following areas of management relate to the dental laboratory technician and the dental laboratory industry: principles and practices of management, marketing management, financial management, human resource management, and production management.

206A-4.5 Dental Ceramics Theory and Laboratory. The student will be able to: write definitions of the nomenclature of ceramics; identify porcelain constituents; identify the parts of the procelain furnace and their use; construct platinum matrices; and, construct six maxillary porcelain jackets. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 200.

206B-4.5 Advanced Dental Ceramics Theory and Laboratory. The student will be able to: draw substructure design for single and multiple unit bridgework; write the theory of color control, demonstrate the uses and maintenance of porcelain equipment, construct single and multiple unit porcelain to gold bridgework; and, demonstrate a working knowledge of staining and shade control. Lecture three hours. Laboratory 17 hours. Five weeks. Prerequisite: 206A.

210-4.5 Dental Laboratory Specialty. The successful student will be able to fabricate dental prosthesis on practical laboratory cases in one of the following specialty areas: full dentures, partial dentures, crown and bridge, or ceramics. Laboratory 20 hours. Five weeks. Prerequisite: all of 100 and 200 level Dental Laboratory Technology Courses.

Design

(SEE ART)

Early Childhood Education

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Earth Science (Minor)

This course of study is designed for the student with an interest in the interdependent dynamic processes that take place on and near the earth's surface. At present the program is structured to complement a major in another discipline. This work may be taken through the College of Liberal Arts, the College of Science, or the College of Education.

A minor in earth science consists of a core program of 13-15 hours and 9 to 11 hours of electives, as follows:

Core Program 13-15

GE-A 110, GE-A 330 or Geography 331 and Geography 302
Plant and Soil Science 346 or GE-A 312
Geology 221

Electives 9-11

Appropriate substitutions may be made with the approval of the adviser.

GE-A 240
Geography 310, 432, 424, 438
Geology 310, 425
Plant and Soil Science 240

Economics (Department, Major, Courses)

The study of economics provides a useful means of analyzing the behavior of consumers, businesses, and government so that the student can better understand many of the problems facing contemporary society. Majoring in economics gives the student an analytical ability and flexibility that is attractive to a wide range of employers in both business and government. Economics is also an excellent major for students who are considering graduate school in law, business, or any of the social sciences.

The economics major in the College of Liberal Arts provides a flexible program with 28 to 35 hours of electives. This flexibility allows the student to follow a program oriented toward a wide range of careers in government and business or to prepare for graduate study in any of several areas.

Economics courses at the 300 level generally require only a limited background in introductory economics, while many economics courses at the 400 level require Economics 340 (440) and 341 (441) as prerequisites. Students considering graduate study in economics should also plan to take Economics 340 and 341 as early in their college careers as possible and should choose several courses at the 400 level to complete their major requirements. A student considering graduate study in economics should plan to take Mathematics 250 and Economics 465.

For transfer students, equivalent economics courses will be accepted from other institutions. However, to complete a major in economics, a student must earn credit in no fewer than five economics courses taken at Southern Illinois University at Carbondale. To complete a minor in economics, a student must earn credit in no fewer than three economics courses taken at Southern Illinois University at Carbondale.

Students are urged to discuss their major programs with the director of undergraduate studies or with any other professor in the Department of Economics; the department also has a director of career information and placement available for consultation.

Courses where a Pass/Fail grade is earned will not be counted as fulfilling the requirements for a major in economics without the written consent of the director of undergraduate studies.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	45
Supplementary College Requirements (See page 75)	(4) + 8-14
Requirements for Major in Economics	32-33
One course from the following all of which are approved substitutes for GE-D 107: Mathematics 117, 140, 150. The student will automatically satisfy a portion of the General Education Area D requirements with any one of these courses. Three hours are already included in total hours shown for General Education Requirements	(3) + 1-2
Economics 214, 215, 308, 340, 341	16
Any five remaining economics courses except 301	15
Electives	28-35
Total	120

Honors Program

Students who are economics majors and working toward a Bachelor of Arts degree in the College of Liberal Arts may choose to enter the Honors Program if

they have a minimum cumulative grade point average of 3.0 in all prior courses in economics.

As part of the ten economics courses required for a major, students in the honors program will be required to take 443 and any two other 400-level economics courses, except 425, 440, 441, 471, and 479.

In order to be granted departmental honors, a student must have attained at graduation, a minimum cumulative grade point average of 3.0 in economics courses taken.

Minor

For students majoring in other departments, a minor in economics is useful for employment in business or government and for graduate work in any of the social sciences, law, or business. The minor requires 15 hours of work in economics including Economics 214 and 215, but excluding Economics 301. A minimum grade point average of 2.0 must be achieved in the 15 hours of economics courses counted toward the minor. Students are urged to discuss their minor program with an economics adviser in order to assist students in designing coherent programs to meet their individual needs.

Courses where a Pass/Fail grade is earned will not be counted as fulfilling the requirements for a minor in economics without the written consent of the director of undergraduate studies.

Courses

214-3 Introduction to Macroeconomics. Determination of income, employment, output and price levels in the national economy; government taxation, expenditure, and monetary policies to solve problems such as inflation and unemployment. Elective Pass/Fail.

215-3 Introduction to Microeconomics. Study of businesses, consumers and the government and their effects on prices, output and income distribution. Current economic problems will be used as illustrative examples. Elective Pass/Fail.

300-3 to 9 Contemporary Economic Problems. A study of one or more contemporary economic problems. Problems chosen vary from semester to semester and the topic will be announced in advance. Prerequisite: 214, 215 or GE-B 211 or consent of instructor. Elective Pass/Fail.

301-1 to 6 Economic Readings. Readings in books and periodicals in a defined field, under direction of one or more faculty members. Periodic written and oral reports. Prerequisite: consent of instructor and department chairperson. Elective Pass/Fail.

303-3 Poverty and the Economy. Poverty as a study of income inequality. Economic determinants of income inequality are isolated and related to current policy proposals. Elective Pass/Fail.

304-3 Economics of the Welfare State. Analysis of programs and proposals attacking poverty, insecurity, inequality of opportunity, and maldistribution of income. Analyzes such programs as social security, unemployment compensation, medical care, income maintenance, public assistance, housing, and job creation. Economic foundations and consequences are linked with social and political problems. Elective Pass/Fail.

308-4 Economic and Business Statistics. Survey of the foundations and applications of the principal statistical methods used in economic and business decision making. Included are probability theory, probability distributions, and testing of hypotheses about, and estimation of, the important types of population parameters. Prerequisite: Mathematics 117 or 140 or 150. Elective Pass/Fail.

309-3 Principles of Econometrics. The application of statistical methods to the measurement of economic relationships. Topics covered include the construction of econometric models, simple and multiple regression analysis, testing of hypotheses, and forecasting. Prerequisite: 308.

310-3 Labor Problems. A comprehensive overview of the relation of labor to the United States economy. Included are the history of labor in the United States; analysis of institutions affecting labor; the theory of wage and employment determination; as well as analyses of unions and collective bargaining, discrimination, unemployment, and the distribution of income. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

312-3 Collective Bargaining and Dispute Settlement. An analysis of the economic social effects of collective bargaining with an examination of its legal framework in the private and public sectors. Special attention to issues discussed in bargaining and to procedures for settling disputes. Readings and cases. Prerequisite: 310 or consent of instructor. Elective Pass/Fail.

315-3 Money and Banking I. Study of the operation of the money and banking system in the United States. Stresses Federal Reserve control of the money supply and credit conditions to combat inflation and unemployment. Monetary arrangements and problems among nations are also considered. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

318-3 Economic History of Europe. The economic growth and development of the European economies from the middle ages to the common market. Topics include the rise of the market system, the development of capitalism and the systematic growth of European economic integration. Prerequisite: 214 or GE-B 211 or consent of instructor. Elective Pass/Fail.

320-3 Economic History of the United States. The dynamic process of American economic growth and development from its colonial beginnings to its status as world economic power. Particular emphasis is given to the changing role of the United States in the developing world economy and the contribution of changing economic institutions to the character and pace of American economic growth. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

322-3 Introduction to Economic Development. An analysis of the preconditions, processes, and problems involved in economic development. Both the theory and policy relevant to development, with special emphasis on the developing or emerging economies, are stressed. Prerequisite: 214 and 215 or consent of instructor. Elective Pass/Fail.

323-2 Operation of Public Utilities. (Same as Engineering Technology 323.) The study of public utilities regulation, electrical utility, load factors, rates fixed, and operating costs, power plant economics, and distribution policy. Prerequisite: GE-B 211 or consent of instructor. Elective Pass/Fail.

329-3 Introduction to International Economics. Introduction to the principles of international economics. Stresses the relationship between the balance of payments and the United States economy, the determinants of deficits and surpluses, and policy options to correct an imbalance. Prerequisite: 214 and 215 or consent of instructor. Elective Pass/Fail.

330-3 Public Finance. Effects of government spending and taxing activities on the rest of the economy. Analysis of government debt, the federal budgetary process, and various taxes used in the United States. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

333-3 Economics of the Environment. Factors which lead to physical and human deterioration in a market economy. Consideration of solutions to such problems as urban decay, overpopulation, and pollution. Prerequisite: 214, 215 or consent of instructor. Elective Pass/Fail.

334-3 Health Economics. Factors underlying the demand for and supply of health and medical care services. Included are the market, voluntary nonprofit, and governmental sectors of the industry. Special topics are the regional coordination of hospital facilities and services, the consumer price index and the measurement of benefits and costs of control programs.

340-3 Intermediate Microeconomics. A survey of theories of household, firm, and government economic behavior in the determination of competitive and non-competitive market prices. Emphasis is on understanding the United States economic system and on evaluating existing and proposed government microeconomic policies designed to improve the system. Not open to students who have had Economics 440. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

341-3 Intermediate Macroeconomics. The determinants of fluctuations in aggregate economic activity, unemployment and inflation. An analysis of the behavior of consumption and investment, the impact of government monetary and fiscal policies, and factors affecting the rate of economic growth. Not open to students who have had Economics 441. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

361-3 Regional and Urban Economics. A survey of regional and urban economic growth and the associated problems, including disparities among regions in income and employment. Examination of governmental policies aimed at reducing or eliminating such problems as depressed areas and urban blight. Prerequisite: 214 or 215 or consent of instructor. Elective Pass/Fail.

375-3 Economics of Antitrust. An economic analysis of government policies intended to limit and/or control the exercise of private monopoly power. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

416-3 Money and Banking II. An examination of the principal institutions whose joint actions determine the supply of money in the United States economy. Emphasis is placed on the commercial bank operating as a firm within the Federal Reserve System. Policy issues are examined for the regulation of the banking industry as well as for the control of the domestic money supply. Prerequisite: 315 or 340 or 341 or consent of instructor. Elective Pass/Fail.

419-3 Latin American Economic Development. Special attention to contemporary policy issues and alternative strategies for development. Among the topics included are inflation

and financial reform, international trade and economic integration, foreign investment, and agrarian reform. Prerequisite: 322 or 340 or 341 or consent of instructor. Elective Pass/Fail.

420-3 The History of American Growth in the 20th Century. An analytical survey of American growth in the present century. Concentrates on problems associated with the United States' role as a world economic power and changes in economic institutions engendered by rapid technological change and the need to cope with such problems as income distribution, equity, the growing public sector, inflation, unemployment, and others. Prerequisite: 340 or 341 or consent of instructor. Elective Pass/Fail.

425-4 Economics in Geography and Planning. (Same as Geography 422.) Concepts, symbols, language, theory, elementary mathematics of economics, and geography. Individual's preferences, production functions, the firm, markets optimality, externalities, and welfare economics. Elementary mathematics of time and intertemporal criteria. Prerequisite: Geography 300 or consent of instructor. Elective Pass/Fail.

429-3 International Trade and Finance. Analysis of the pattern and volume of world trade and capital flows; effects of trade and payments on the domestic economy; problems and methods of adjusting to change in the balance of payments. Prerequisite: 340 and 341 or consent of instructor; and Mathematics 117, or 140, or 150, or consent of instructor. Elective Pass/Fail.

431-3 Public Finance II. State and local. Analysis of the economic effects, problems, and alternative solutions concerning state and local government expenditures, revenues, and debt. Prerequisite: 330 or 340 or 341 or consent of instructor. Elective Pass/Fail.

436-3 Government and Labor. (Same as Political Science 428.) Influence of government and law on collective bargaining, on the internal operation of unions, and on job discrimination in the public and private sectors. Prerequisite: GE-B 211 and 212 or equivalents or consent of instructor. Elective Pass/Fail.

440-3 Price, Output, and Allocation Theories. A systematic survey of theories of product prices, wage rates, rates of production and resource utilization under conditions of competition, monopolistic competition, oligopoly and monopoly markets. Emphasis is on developing analytical tools useful in the social sciences. Not open to students who have had Economics 340. Prerequisite: 215 or consent of instructor. Elective Pass/Fail.

441-3 Contemporary Macroeconomic Theory. An examination in the causes of inflation, unemployment, and fluctuations in aggregate economic activity, factors affecting consumption and investment, and the sources of economic growth. Emphasis is on understanding contemporary United States macroeconomic problems and the options for fiscal, monetary, and incomes policies facing the United States government. Not open to students who have had 341. Prerequisite: 214 or consent of instructor. Elective Pass/Fail.

442-3 Monopoly and Competition in the Industrial State. A survey of economic theories and empirical studies on the nature and consequences of business rivalry in imperfectly competitive markets. Prerequisite: 340 or 440 or consent of instructor; and Mathematics 117, or 140, or 150, or consent of instructor. Elective Pass/Fail.

443-3 Honors Seminar in Economics. Application of the tools of economic analysis to the study of contemporary social problems. Enrollment limited to economics majors who have a minimum cumulative grade point average of 3.0 or higher in all prior economics courses. Economics graduate students are not permitted to enroll in this course. Prerequisite: 340 and 341; and Mathematics 117, or 140, or 150, or consent of instructor.

450-3 History of Economic Thought. An analytical study of the development of economic ideas, with special reference to historical and societal context, central thrust, and impact. Such benchmark figures as Smith, Marx, Marshall, Veblen, and Keynes are highlighted and major schools of economic thought are identified. Prerequisite: 214 and 215; or GE-B 211; or consent of instructor. Elective Pass/Fail.

465-3 Mathematical Economics I. A systematic survey of mathematical economics. Application of basic mathematical tools to economic analysis, and a restatement of economic theory in mathematical terms. Prerequisite: 340 or 440, and Mathematics 117 or 140, or consent of instructor. Elective Pass/Fail.

467-3 Introduction to Econometrics. Introduction to the use of statistical inference and distribution theory for measuring and testing economic theory. Emphasis placed on the linear model, least square estimation, hypothesis testing, and the underlying assumptions. Prerequisite: 308; Mathematics 117, or 140, or 150 or consent of instructor. Elective Pass/Fail.

471-3 Land Resource Economics. (See Agribusiness Economics 440.) Elective Pass/Fail.

479-3 Problems in Business and Economics. Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: 215; 308 or Administrative Sciences 208; Marketing 304; Mathematics 117, or 140, or 150 or consent of instructor. Elective Pass/Fail.

481-3 Comparative Economic Systems. Capitalism, socialism, communism, and other forms of social organization are examined from a theoretical point of view. Economic and

social theories from Adam Smith and Karl Marx to Milton Friedman and Paul Sweezy will be examined. Prerequisite: 340 or 440 or consent of instructor. Elective Pass/Fail.
500-3 to 24 (3 per topic) Economic Seminar.
501-1 to 21 Economics Readings.
502-1 to 4 Readings in Resource Economics.
507-1 to 4 (1, 1, 1, 1) Practicum in Undergraduate Teaching.
510-2 Research in Economics: Design, Methodology, and Presentation.
512-3 Seminar in Labor Institutions.
517-3 Monetary Theory and Policy.
518-3 Monetary Theory and Policy II.
520-6 (3, 3) Economic Development Theory and Policy.
522-3 Microeconomic Foundations of Labor Markets.
525-4 Seminar in Economics in Geography and Planning.
530-3 Foreign Trade.
531-3 International Finance.
532-3 Economics of Human Resources.
533-3 Public Finance Theory and Practice.
534-3 Economics of Taxation.
540A-3 Microeconomic Theory I.
540B-3 Microeconomic Theory II.
540C-3 Microeconomic Theory III.
541-6 (3, 3) Macroeconomic Theory I and II.
545-3 Resource Economics.
546-3 Workshop in Resource Economics.
552-3 Seminar in Economic Thought.
555-3 Seminar in Economic History.
562-3 Seminar in Economic Systems.
565-3 Applied Econometric Analysis.
566-3 Mathematical Economics II.
567-6 (3, 3) Econometrics I and II.
570-3 Seminar in Contemporary Microeconomic Theory.
571-3 Seminar in Contemporary Macroeconomic Theory.
583-3 Methodological Foundations of Economics.
585-3 Seminar in Social Economy.
590-1 to 8 (1 per semester) Seminar in Contemporary Economics.
598-1 to 3 Research Paper.
599-1 to 6 Thesis.
600-1 to 36 (1 to 16 per semester) Doctoral Dissertation.
601-1 to 12 per semester Continuing Research.

Education (Courses)

Courses

200-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.
201-1 The Teacher's Role in Public School Education. Designed to assist students in confirming their thinking concerning the desirability of pursuing a career in teaching. A requirement in the professional education sequence, this course is available at the freshman level and is prerequisite to admission to the Teacher Education Program. Two-day long observation field trips to elementary and secondary schools are required during the semester in which 201 is completed. Mandatory Pass/Fail.
258-1 to 4 Credit for Work Experience. Credit granted for prior work experience relevant to the student's major program in which specific experiences with children or youth can be documented. Prerequisite: 201, 302, and consent of the coordinator of professional education experiences.
259-1 to 60 Occupational Education Credit. Credit for educational experiences in training schools and institutes relevant to the particular departmental program. Credit hours to be determined by the associate dean for undergraduate studies.
300-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.
301-2 Human Growth, Development, and Learning. A requirement in the professional education sequence. Deals with factors involved in the teaching-learning process including: cognitive development, socio-personal characteristics, socio-cultural characteristics, motiva-

tion for learning, and principles of school learning. Two hours lecture; one hour laboratory. Prerequisite: GE-B 202 or equivalent, admission to the Teacher Education Program.

302-2 Basic Techniques and Procedures in Instruction. A requirement in the professional education sequence. Techniques and procedures applicable to effective teaching including the topics: planning for instruction, strategies for instruction, assessment and evaluation, and classroom management. During the semester when enrolled in 302, each student is required to spend one-half day per week doing observation and participation activities in public schools or other appropriate settings. Prerequisite: admission to the Teacher Education Program.

303-2 School and Society: Historical, Sociological, and Philosophical Perspectives. A requirement in the professional education sequence. Fulfills the minimum state certification requirement in the history and/or philosophy of education. Assists students in developing and an understanding of the organization, function, and role of schools in the United States. Prerequisite: admission to the Teacher Education Program.

304-2 to 16 (2, 2, 2, 2, 2, 2, 2, 2) Individualization in Professional Education. A series of courses dealing with various aspects of professional education. One course must be selected as part of the professional education sequence requirement. **(a)** Educational media. Selection and utilization of audiovisual materials in the learning environment, elementary through secondary level. Audiovisual machine laboratory is required. A $10 laboratory fee is required. **(b)** Career Education. Principles and practices of career education K-adult. Classroom study and field experiences. Understanding administration and curricular organizations at various levels and in various agencies. Field trip fee $10 **(c)** Evaluation in the Classroom. Construction and use of evaluation instruments intended to assess learning especially in the public school settings. **(d)** Teaching in the middle and junior high school. The role of the middle and junior high school in the present school structure. A focus on the curriculum, learning, and instruction patterns unique to this area. **(e)** Teaching the special needs learner. Emphasizes an understanding of special needs learners (e.g., educationally disadvantaged youth) and the development of strategies which are effective in teaching them. **(f)** Teaching and affective education. The affective domain of educational objectives. Emphasis given to a theory of values and strategies for the clarification of values; the process of valuing as an operation of teaching. **(g)** Discipline and classroom management. Techniques and procedures intended to provide teachers with skills for managing groups of students. Content includes group dynamics and leadership skills. **(h)** Extra-curricular activities in the junior high and senior high school. An overview of the extra-curricular activity program in secondary schools, focusing on the various types of activities, the role of the teacher as sponsor, adviser or coach, and the function of the activity program as a part of the total curriculum of the school. Prerequisite: admission to the Teacher Education Program.

312-1 to 8 Field Observation and Participation. Allows the pre-service teacher education student to observe and participate in activities and experiences relating to the offerings of their major department. These experiences will be correlated with the offerings of the student's major department, and the experiences will be designed to meet the needs of the individual student. Enrollment in this course will be coordinated by the student's major department. Placement in public school settings will be coordinated by the Office of Teacher Education. Prerequisite: 301, 302, 303, or concurrent enrollment.

350-3 Seminars in Professional Education. A requirement in the professional education sequence. Concentrates on situations, events, and issues that frequently arise in public school work. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 400 and 401. Mandatory Pass/Fail.

400-4 Student Teaching. A requirement in the undergraduate professional education sequence, 400 represents preliminary student teaching experiences necessary for certification entitlement. Enrollment in this course must be arranged through the Office of Teacher Education. For undergraduate credit only. Students majoring in special education and seeking entitlement to more than one teaching certificate in the State of Illinois may in certain instances be allowed credit for up to 8 semester hours of Education 400. Such increase in hours shall be contingent on the student enrolling in 4 hours of Education 400 in each of two semesters, and shall require the written permission of the coordinator of professional education experiences. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 350 and 401.

401-8 Student Teaching. A requirement in the undergraduate professional education sequence, 401 concludes the student teaching experience necessary for certification entitlement. Enrollment in this course must be arranged through the Office of Teacher Education. For undergraduate credit only. Prerequisite: admission to the Teacher Education Program, acceptance for student teaching, and concurrent enrollment in 350 and 400.

402-5 to 8 Student Teaching for Provisionally Certified Teachers. Offered for purposes of converting a provisional teaching certificate to a standard teaching certificate. The student teaching experience may be provided for in the position of employment under the supervision of a university supervisor. Enrollment in this course must be arranged with

the coordinator of professional education experiences in the Office of Teacher Education. Prerequisite: consent of instructor, provisional certificate, and teaching experience. For undergraduate credit only.
450-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.
550-1 to 10 Experimental Education.
590-4 Doctoral Seminar in Cultural Foundations of Education.
591-4 Doctoral Seminar in Behavioral Foundations of Education.

Educational Leadership

(Department, Major [Graduate only], Courses)

The Department of Educational Leadership does not offer an undergraduate major but offers courses for undergraduate credit over a broad range of subject matter in cultural and legal foundations of education.

Courses

354-3 Philosophy of Education. (Same as Philosophy 355.) Intended primarily for those interested in education as a profession. Schools of philosophy are reviewed as they relate to education, and students are encouraged to develop and apply philosophic thought to the practices and problems of education.
360-3 Subcultures in American Education. Poverty, racial prejudice, and various subcultural issues as may relate to American educational development. Analysis of conflicting systems of cultural values and norms and their implications.
421-3 The Law, The Teacher, and The Student. Legislative and case law including civil rights and responsibilities for the teacher and for the student.
430-3 History of Education in the United States. An historical study of the problems of American education.
432-3 Education and Social Forces. A study of the social forces that shape educational policies in the United States.
454-3 Contrasting Philosophies of Education. An examination of current educational problems and trends in the light of contrasting philosophies of education.
455-3 Introduction to Adult and Continuing Education. Introduces the multifaceted areas of adult and continuing education in traditional and non-traditional settings by reviewing and studying philosophies, directions, program efforts, and activities associated with them.
475-3 Administration of Staff Development Programs in Adult and Continuing Education. Review and examination of the needs, problems, administrative requirement, and alternatives available for staff development in adult and continuing education. Emphasis will be placed on needs assessments, planning, and designing inservice or staff development programs to meet institutional needs and individual professional needs.
495 (3 to 9) (3, 3, 3) Workshop in Adult Education. The foci for these workshops are to provide quality educational experiences for students and practitioners in the field of adult and continuing education in three major areas: (a) current issues, (b) improvement of instruction and programs in adult education, and (c) evaluation in adult education.
500-3 Educational Research Methods.
501-3 Educational Administration: Tasks and Processes.
503-3 Educational Administration: Introduction to Theory.
505-2 Organization and Administration of the Middle and Junior High School.
507-3 Secondary School Principalship.
509-3 School-Community Relations and Development.
510-3 Foundations of Adult Education.
511-3 Organization and Administration of Curriculum.
513-3 Supervision of Instruction.
515-1 to 12 Current Issues in Educational Administration.
517-3 The Legal Framework of Education.
519-3 Illinois School Law.
521-3 School Facilities.
525-3 School Finance Theory.
527-3 School Business Administration.
529-3 Supervision of Personnel: Problems.
530-3 Historical Research in Education.
531-3 School Boards and Policies.

533-3 Elementary School Principalship.
535-3 Organization and Administration of Adult and Continuing Education Programs.
537-3 The Adult Learner.
539-3 Evaluation and Accreditation in Schools.
541-3 Personnel Evaluation.
543-3 Professional Negotiations.
549-3 Naturalistic Research Methodology.
551-3 Educational Leadership: Politics of Education.
552-3 Seminar in Comparative/International Education.
553-3 Educational Leadership: Systems and Accountability.
554-3 Seminar in Philosophy of Education.
555-3 Advanced Educational Administration Theory.
556-3 Seminar in History of European Education.
558-3 Advanced Seminar in Comparative/International Education.
559-3 Interdisciplinary Seminar in Educational Administration: I.
560-3 Education and Culture.
561-3 Interdisciplinary Seminar in Educational Administration: II.
562-3 Education and the American Way of Life.
564-3 Education and the Challenges of the Twentieth Century.
565-3 Continuing Education and Extension Services.
575-3 Seminar in Adult and Continuing Education.
588-3 to 9 General Graduate Seminar.
590-1 to 6 Readings.
593-1 to 3 per topic Individual Research.
595-1 to 8 Internship.
596-1 to 6 Independent Investigation.
597-1 to 8 Externship.
599-1 to 6 Thesis.
600-1 to 36 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Educational Media

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Educational Psychology (Department, Major [Graduate Only], Courses)

The Department of Educational Psychology does not offer an undergraduate major but offers courses for undergraduate credit which serve as electives for students in other programs.

Courses

100-2 Decision Making for Career Development. Examination of factors relating to career decision making. Emphasis on the continuous use of learned processes and information in vocational development. Supplementary group guidance and counseling sessions required. Charges may be assessed to cover the cost of administering and scoring occupational interest surveys to be given during the course. These charges should be less than $10.
307-3 Educational Psychology. The basic factors involved in the teaching-learning process including student characteristics, motivation, learning, and teacher-student relationships. The course activities are intended to prepare the student with a basic foundation in educational psychology for the purpose of teaching.
380-1 to 4 Practicum in Instructional Roles. One semester hour of credit for every three modules selected. Application of educational psychology in a practical teacher-learner situation. Class members conduct actual instructional activities with individuals or groups of students. Field activities are required and the students may be required to purchase additional materials not to exceed $20. Prerequisite: consent of instructor.
402-3 Basic Statistics. A master's level terminal statistics course. Emphasis on descriptive statistics and graphical representation of data. Includes a brief introduction to hypothesis testing procedures.
412-3 Human Behavior and Mental Health. A study of the principles of human needs, mechanisms of adjustment, and factors and conditions in life that tend to affect mental health. Prerequisite: junior or senior standing.

418-3 Psychology of the Classroom. Intended to develop interpersonal skills such as values clarification, empathy, and listening. Strategies for the resolution of conflicts and reasons for students demonstrating disruptive behavior will be discussed. Role-playing, group processes, concepts and activities in behavior modification, and activities related to concepts of discipline will be examined. Content should be suited to parents, teachers, and other professionals.
422-3 Introduction to Individual and Group Assessment. The student will be introduced to the basic testing process and the problems related to individual group assessment and will be expected to choose a project for study and investigation. The project must be related in some way to the role and function of the counselor in different settings. The various types of assessment instruments and the manner in which the data derived therefrom can be employed in consultation.
442-3 Introduction to Counseling and Guidance Systems. The following topics will be covered: purposes of counseling and guidance; counselor roles in various settings; approaches to counseling; guidance activities; and application of the above.
481-1 to 12 Seminar. Conducted by staff members and distinguished guest lecturers on pertinent topics. Prerequisite: consent of instructor and department.
490-3 Introduction to Marriage and Family Counseling. Problems and techniques of premarital, marital, divorce, family, and family crisis counseling. Counseling individuals singly, in family units, and in groups.
491-1 to 6 Special Research Problem — Individual Study. For majors. Formulating, investigating, and reporting on a problem in the area of guidance. Prerequisite: advanced standing and consent of department.
493-3 Counseling Skill Development. Through simulated counseling situations and extensive examination of counseling case studies, counseling skills are examined and practiced.
494A-3 Child Counseling Practicum. A combined seminar, laboratory, and field experience representing the central focus of the program in elementary counseling. Enables the student to practice the role of the counselor under close supervision. Prerequisite: 537 and 3 additional hours from substantive course work in the guidance and counseling program.
494B-3 Adolescent and Adult Counseling Practicum. Practice of counseling skills with an adolescent or an adult population in varied settings. The professional setting depends on the student's interest area. Individual and group supervision are provided. Use of tape recorder is required. Prerequisite: 538 and 3 additional hours from substantive course work in the guidance and counseling program.
494C-3 Career Counseling Practicum. Supervised experience in handling career development experiences at elementary, secondary, or college levels. Application of theoretical models to program development is stressed, including presentation of relevant lessons, handling of group guidance activities, and conducting individual career development counseling sessions. Intern experience in public school or college settings equal to one day per week is required. Prerequisite: 542 and 3 additional hours from substantive course work in the guidance and counseling program.
494D-3 to 6 (3, 3) Practicum in School Psychology. Observation and participation in case conferences related to the development of psycho-educational assessment and planning, including teacher and parent consultation, field observations, and psychometric applications. Prerequisite: consent of instructor.
506-4 Inferential Statistics.
507-4 Multiple Regression.
508-4 Experimental Design in Educational Research.
511-3 Instructional Psychology.
512-3 Affective and Cognitive Behaviors at the School Level.
513-3 Psychological Trends in Education.
515-3 The Psychological Aspects of Instructional Design.
521-3 Analysis of Classroom Behavior — Consultative Practices for School Personnel.
525-3 Cross Cultural Factors Affecting Counseling.
530-3 Standardized Testing: Use and Interpretation.
531-3 Principles of Measurement.
532-3 Theories of Intelligence.
533-4 Individual Measurement and Practice.
537-3 Counseling Children: Theory, Techniques, and Practice.
538-3 Adolescent and Adult Counseling: Theory, Techniques, and Practice.
540-3 Issues and Trends in Counseling.
542-3 Career Development Procedures and Practices.
543-3 Group Theory and Practice.
546-4 Personality Assessment.
547-3 Implementation of Counseling Services.
551-3 The Supervision of Practicum.
555-3 to 6 (3, 3) Seminar in School Psychology.
562-6 (3, 3) Human Development in Education.

567-2 to 9 (2 to 6 per semester) Topical Seminar in Educational Psychology.
568-1 to 12 (1 to 6 per semester) Topical Seminar in Counseling and Guidance.
570-3 Humanistic and Behavioral Theories in Education.
580 Doctoral Seminar in Educational Measurement and Statistics.
591-3 to 6 Internship in Counseling.
592-1 to 8 (1 to 6 per semester) Independent Study and Investigation.
593-1 to 4 Individual Research.
594-1 to 6 Advanced Practicum.
595-4 to 8 (4, 4) Internship in the Psychology of Teaching.
596-15 (5 per semester) Internship in School Psychology.
597-12 (6, 6) Doctoral Internship in Counseling.
599-1 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Electrical Sciences and Systems Engineering

(SEE ENGINEERING)

Electronic Data Processing (Program, Major, Courses)

The growth of electronic data processing in both the expansion of installations and in the complexity of hardware and software has increased the need for competent computer programmers and systems analysts. The need for persons trained only on unit record equipment, however, is decreasing.

The curriculum in electronic data processing at the School of Technical Careers prepares students for employment as business computer programmers and systems analysts. Skills which the graduate obtains include competency in programming languages (such as COBOL, Assembler, and RPG) and associated areas such as accounting and systems design and development.

An outstanding feature of the program at the School of Technical Careers is the availability of an IBM 370 computer system for batch and interactive use. The hardware and software configuration is representative of large computer installations in industry. The data center is accessible for approximately 100 hours per week.

The student should plan to spend small amounts for special laboratory materials.

An advisory committee of professional people and educators helps to keep the program responsive to needs in the field.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experiences.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Electronic Data Processing

GE-D 101, 152 or 153	6
School of Technical Careers 120, 220, 210a and 102 or GE-D 118	10
Electronic Data Processing 101, 102, 103, 104, 135, 201, 203, 204, 205, 206, 207 each with a grade of *C* or better	37
Approved Electives	9
Total	62

Minor

A minor in electronic data processing consists of 20 semester hours with 9 in core courses, 6 in other electronic data processing courses, and 5 of approved electives.

Core Courses: Electronic Data Processing 101 or 107, 102 or 217, 103	9

Any two electronic data processing courses except 135 and those used for the core 6
Approved electives: A listing of approved courses is available from the Electronic Data Processing department 5
All prerequisites must be satisfied for electronic data processing courses taken for the minor.

Courses

101-3 Introduction to Data Processing. The successful student should be able to demonstrate an understanding of basic terminology, procedures, applications, and equipment used in data processing, and be able to compare manual, punched card, and computer methods of processing. Lecture three hours.
102-3 Introduction to Programming. The successful student should be able to flowchart logical solutions to and write programs for business data processing problems. The student should also understand the general approaches to totaling, sub-totaling, table processing, and file updating. Lecture three per week.
103-3 COBOL Programming I. The successful student will solve a variety of simple problems using card and printer files. Lecture three per week. Prerequisite: 101.
104-3 Data Processing Applications. The successful student will demonstrate by examination a general knowledge of processing procedures and terminology for basic business applications such as billing, accounts receivable, accounts payable, inventory control and payroll. Lecture three hours. Prerequisite: 101.
107-3 Electronic Data Processing Concepts. Designed as a concepts course for non-data processing majors. Each student will learn the basic operation and functions of data processing equipment, be able to flow chart logical solutions, write a program for a simple data processing problem, describe the use of several different programming languages, and discuss the impact of computers on our socio-economic system. Averages two lecture and three laboratory hours per week. Elective Pass/Fail.
109-2 Punched Card Preparation. Designed as a skill course for non-data processing majors. Each student will learn the basic operation and function of IBM unit record machines, memorize the keyboard and design program cards for the IBM 26 and 29 model key punches. Most of the laboratory time will be spent in improving speed and accuracy of alphameric punching. Averages one lecture and three laboratory hours per week. Prerequisite: typing skills.
110-3 Introduction to Business and Data Processing Careers. Upon the completion of this course of study, the student should be able to describe the foundations and responsibilities of business; management of the business firm; human factors in management; financing the business firm; quantitative aids of the business manager; marketing and distribution; legal government, and social environment; the world of computers and data processing; and data processing career opportunities. Lecture three per week. Prerequisite: major in electronic data processing or consent of department.
135-3 Data Processing Mathematics. Upon completion of this course of study, the student should be able to successfully work problems involving decimal numbers; other number bases; basic algebra; equations; functions; nonlinear functions; simultaneous systems of equations; matrices; linear programming; series; numerical methods; Boolean algebra; logic; sets; and hexadecimal-decimal conversion, and basic business statistics. Lecture three per week. Prerequisite: high school algebra.
201-4 Assembler Language Programming. The successful student should be able to demonstrate a working knowledge of Assembler Language by coding and running programs using card/disk/printer input-output, the decimal instruction set, table processing using indexing and internal subroutines. Lecture four per week. Prerequisite: 102 or equivalent.
202-3 FORTRAN IV Programming. The successful student will demonstrate a working knowledge of the FORTRAN IV programming language by flow charting, coding, compiling and testing a variety of mathematical and statistical problems. Lecture two hours. Laboratory three hours. Prerequisite: Mathematics 111 or consent of instructor.
203-3 Job Control Language and Utilities. The successful student should have an understanding of the role of a computer operating system, and should be able to demonstrate a working knowledge of both JCL and utility programs by coding the JCL and utility control statements necessary for activities such as creating, copying, and sorting files. Lecture three hours. Prerequisite: experience with a batch processing system.
204-3 COBOL Programming II. The successful student will solve complex problems using disk files and advanced COBOL features. Lecture three per week. Prerequisite: 103 or equivalent.
205-2 to 3 Systems Design and Development. The successful student will demonstrate in class discussion, on examinations and by preparing a case study, an ability to design an ef-

fective business information processing system including the system flow chart, system specifications, feasibility, the implementation procedure and essential documentation. Students electing not to complete the individual project will register for only two hours of credit and must have the consent of the department. Lecture two hours, additional laboratory hours to be arranged. Prerequisite: 104 or consent of department.

206-3 RPG Programming. The student should be able to prepare a variety of reports from several established card and disk data files. Primary emphasis is placed upon using the Report Program Generator programming language. RPG II using the disk operating system is stressed. Averages three lectures per week. Prerequisite: 101.

207-6 Data Processing Project. Designed to provide the student with a data processing problem which is beyond the scope of any single course. Prerequisite: consent of department.

208-8 (4, 4) Numerical Control Programming. The student will be able to **(a)** operate basic data processing machines; plan, code, test and debug an elementary FORTRAN IV program; plan, code, test and prove an elementary AD-APT part program, and **(b)** describe the environment in which the AD-APT system resides and become proficient in using the AD-APT part programming language. Lecture two hours. Laboratory three hours. Prerequisite: Tool and Manufacturing Technology 210.

209-1 to 8 Data Processing Internship. Designed to provide the students with meaningful practical experience. Involves study, observation, and participation in a data processing installation. Hours and credit arranged individually. May be repeated for credit up to eight hours total. Prerequisite: consent of department. Mandatory Pass/Fail.

217-3 Computing for Business Administration. Designed for business oriented students who need to know how computer systems may be used as management tools. Topics include: types of hardware and software, information systems design and management, and an introduction to FORTRAN programming. A successful student will be able to write programs in FORTRAN to analyze management information. Lecture three hours. Prerequisite: completion of the General Education mathematics requirement or equivalent.

235-2 Business Statistics. The student will present data in tabular form and draw graphic representations of data; compute measures of central tendency and solve problems dealing with measures of dispersion and skewness; do basic probability computation; deal with sampling distributions; and solve problems dealing with regression and correlation analysis. Lecture two hours. Prerequisite: Accounting 110 or consent of instructor.

240-3 Database Processing. Database concepts, design, languages, implementation, and administration. Students will write, compile, and execute COBOL programs to retrieve, update, and create database records. Lecture three hours. Prerequisite: 204B or consent of department.

241-3 Data Communications. The successful student will acquire a working knowledge of the terminology and concepts of data transmission. Lecture three per week. Prerequisite: 240 or consent of department.

260-3 Introduction to Text Processing. (Same as Secretarial and Office Specialties 260) Each student will learn the basic operations and functions of representative work processing machines and terminals. The laboratory time will be spent in improving speed and accuracy in the typing of textual materials. Lecture two hours, laboratory three hours. Prerequisite: typing skills.

Electronics Management

(SEE ADVANCED TECHNICAL STUDIES)

Electronics Technology (Program, Major, Courses)

The goal of the electronics technology program is to educate electronics technicians capable of taking their places in industry in both indirect and direct support to the electronics engineer. Experiences in meter measurements and troubleshooting are provided with manuals and specifications to allow the indirect supporting technician to work for a senior technician. More than an hour each day is spent descriptively and mathematically presenting the general theory principles of electronics. This theory is then applied in a two-hour laboratory each day to design, breadboard, and evaluate circuitry to not only reinforce the theory knowledge but to prepare the direct supporting technician for work later directly for an engineer. During the early stages of the program, most instruction is

directed toward basic principles of electricity and electronics. This instruction is followed by principles related to study of communication systems, digital circuits, instrumentation, and control system.

The persons who make the best electronics technicians are those who are interested in physics and mathematics, who have a desire to learn how complex equipment functions and are careful of small details, and who enjoy seeking out and solving problems.

The purchase of a set of specified hand tools, costing approximately $150, is mandatory for students enrolled in the program. A list of the specific hand tools and supplies required will be sent upon request.

An advisory committee drawn from among professionals active in the industry helps to assure that students get a course of study that will prepare them for existing and developing conditions in the field.

Opportunities exist throughout industry for technicians, and students are limited only by their own talent and motivation. Job pay is directly commensurate with the technician's ability, resourcefulness, and initiative.

Students who have an excellent background in AC-DC theory are especially suited for an accelerated program. Students who have extensive studies in electronics in high school vocational courses and at area vocational centers are encouraged to enter an accelerated program which shortens the time required to earn the associate degree at the School of Technical Careers. The electronics technology faculty has developed a formalized program of proficiency testing which allows these students to:

1. Gain credit in first semester courses through testing.
2. Take second semester major courses during the eight-week summer session.
3. Begin third semester, or sophomore, courses in the fall semester of what would normally be their freshman year at college.

Electronics Technology 301, 302, 303, 311, 312, and 313 are post-associate courses. Students must have an Associate in Applied Science degree in electronics technology or equivalent to enroll in these courses. Additional electronics parts and supplies are required for these courses. The approximate cost of these parts and supplies is $200 to $250.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Electronics Technology

GE-D 101, 153	6
School of Technical Careers 105a,b 107a,b, 102 or GE-D 118	10
Electronics Technology 101, 102, 111, 112, 121, 122 or 223, 201, 202, 211, 212, 221	53
Computer Science 202 or Electronics Data Processing 217	3
Total	72

Courses

100-3 Introduction to Electronics. A non-mathematical introduction to the world of electronics. The uses of electricity and control devices for its use. Laws and theories which govern electronics. Devices and circuits which make up today's electronic systems. Current flow through the conductors and devices which make up electronic circuits. No mathematics prerequisite.

101-5 DC-AC Circuit Analysis. The laws and theory principles of DC-AC passive circuits are presented in a comprehensive manner using descriptive, mathematical, and verbal analytical approach. Prerequisite: concurrent enrollment in School of Technical Careers 105a,b and electronics technology major or consent of program supervisor.

102-5 Electronics Circuit Theory. The operation of active devices with their passive com-

ponents are descriptively, verbally, and mathematically presented in circuits such as simplifiers, oscillators, op amps, and other IC systems. Prerequisite: 101 and electronics technology major or consent of program supervisor.

111-6 DC-AC Circuit Analysis Laboratory. Application of the theory studies in 101 on passive circuits is made under experimental conditions. Laboratory ten hours. Prerequisite: concurrent enrollment in 101.

112-6 Electronics Circuits Laboratory. Application of the theory studies in 102 on electronic circuits is made under experimental conditions. Laboratory ten hours. Prerequisite: 111, and concurrent enrollment in 102.

121-3 Electronic Devices. The focus is placed on electronic devices, their construction, operational characteristics, and application in a single functional block according to manufacturer specifications. Lecture three hours. Prerequisite: concurrent enrollment in 111.

122-3 Communications Fundamentals. Communications systems, components, propagation, and coupling, and other transmission modes are covered as applied to communications. Prerequisite: 101.

201-1 to 5 Telemetry and Industrial Circuits Theory. The theory principles are covered on circuitry employed in the measurement, transmission, resolution, and development of data required for operation in industrial and commercial applications. Lecture five hours. Hours and credit to be individually arranged. Prerequisite: 102 and consent of instructor.

202-1 to 5 Digital Circuits Theory. Concepts of the circuits used to make up such systems as numeric controls, computers, and communications networks. Lecture five hours. Hours and credit to be individually arranged. Prerequisite: 102 and consent of instructor.

211-6 Telemetry and Industrial Circuits Laboratory. Application of the theory studied in 201. It develops skills in design, testing, and troubleshooting transducers, telemetry equipment, and industrial circuits. Laboratory ten hours. Prerequisite: concurrent enrollment in 201 or consent of instructor.

212-1 to 6 Digital Circuits Laboratory. The laboratory provides organized investigation of individual circuits and subsystems that are employed in a variety of major systems in industry and commerce. Laboratory ten hours. Hours and credit to be individually arranged. Prerequisite: 102 and consent of instructor.

221-3 Electronic Systems Analysis. Extends the basic analysis skills developed in the prerequisite course to the analysis of typical modern electronic systems and subsystems. Lecture three hours. Prerequisite: 102 or consent of instructor.

223-3 Federal Communications Commission Test Preparation. Programmed instruction designed to prepare a student for the test for the general FCC radio-telephone license. Individualized instruction three hours. Prerequisite: 102 and electronics technology major or consent of program supervisor.

224-3 Computer System Applications. Analysis and working knowledge of numbering systems, Boolean algebra, logic gates, pulse shaping circuits, and various timing circuits used in computers, microprocessors, and other digital systems. Prerequisite: 101 and 111 or consent of program coordinator.

301-1 to 5 Introduction to Electronic Biomedical Instrumentation. Designed to develop an understanding of the fundamentals of electronic circuits employed in biomedical instrumentation of the following purposes: cardiovascular measurements, patient care and monitoring, measurements in the respiratory system, measurement of physical variables, sensory measurements for the study of behavior, biotelemetry, instrumentation for the clinical laboratory, X-ray and radioisotope instrumentation, and particularly electrical safety for medical equipment. Lecture five hours. Hours and credit to be individually arranged. Prerequisite: consent of instructor.

302-3 to 4 Optical Electronics. The student will be required to identify the basic principles of light physics as they relate to laser and fiber optic theory. Integration of electronic control, measuring, and sensing devices will be accomplished within an industrial and communication framework. A systems approach will be utilized involving laser, fiber optic, and electronic discrete and integrated components. It is an applied course intended as a post-associate offering primarily for students in electronics technology providing exposure to the technical aspects of an important emerging area of electronics. Prerequisite: 102.

303-5 Microcomputer Construction and Troubleshooting. Upon successful completion of this course, the student will be able to construct a microprocessor based system and make it operational, generate software or use software techniques which would be used in software/hardware troubleshooting, use equipment and techniques which would be used in efficient microprocessor system troubleshooting, and use the equipment or techniques learned to troubleshoot a microprocessor based system.

311-1 to 6 Electronic Biomedical Instrumentation Laboratory. The laboratory is designed to provide hands-on experience with the equipment currently available for use in biomedical instrumentation. The equipment is selected from the major supplies and will be utilized to teach interfacing and applications. The equipment will encompass sensors, transducers, amplifiers, oscillators, display and recording devices. Complete systems approach will be taught in conjunction with the medical school laboratories on existing equipment. Laboratory ten hours. Hours and credit to be individually arranged. Prerequisite: consent of instructor.

312-2 Optical Electronics Laboratory. The student will perform selected experiments in electronics, lasers, fiber optics, and light physics. Emphasis will be placed on the integration of laser and fiber optic principles with electronics. Laboratory three hours. Prerequisite: 102 and concurrent enrollment in 302.
313-6 Microcomputer Construction and Troubleshooting Laboratory. This laboratory is designed to reinforce the concepts of microcomputer operation, troubleshooting, programming, and interfacing through actual practice. Ten hours laboratory. Prerequisite: concurrent enrollment in 303.
319-1 to 15 Electronics Occupations Internship. Students will be assigned to a University approved program to engage in activities related to the electronics technology program and the student's career objectives. The student will perform duties as assigned by the work supervisor and internship coordinator. Reports and assignments are required. Prerequisite: consent of instructor. Mandatory Pass/Fail.

Elementary Education

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Engineering (Departments, Majors, Courses)

CIVIL ENGINEERING AND MECHANICS (Department)

Two degree programs are offered by the Department of Civil Engineering and Mechanics. One program leads to a Bachelor of Science degree in civil engineering (see civil engineering) and the other leads to a Bachelor of Science degree in engineering with a specialization in engineering mechanics (see engineering mechanics).

The civil engineering curriculum is designed to give the student a foundation in the basic principles used in the practice of civil engineering and how these principles are applied both in theory and design. This program prepares the student to work in a wide range of civil engineering career options. Civil engineering is often called a people-serving profession.

The engineering mechanics curriculum in a program of study that stresses breadth and fundamentals in the physical and engineering sciences. Mechanics is basic to most fields in engineering. The program prepares students for a wide range of engineering jobs including research and is excellent preparation for graduate study in a number of engineering areas.

CIVIL ENGINEERING (Major, Courses)

The civil engineering program leading to the Bachelor of Science degree is designed to provide the student with the broad educational background essential to modern civil engineering practice. Technical electives in the senior year permit greater breadth or additional depth in such areas of concentration as structural and geotechnical engineering, hydraulic engineering, environmental engineering, and applied mechanics. Students interested in majoring in civil engineering are strongly urged to complete a double major within the Department of Civil Engineering and Mechanics. This can be accomplished by taking 18 additional hours of approved coursework and thus satisfying the graduation requirements for a Bachelor of Science degree with a major in engineering with specialization in engineering mechanics. The latter is fully accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, the recognized agency for accrediting engineering curricula in the United States. The civil engineering program has just been introduced and will be due for accreditation review during a future ABET inspection.

Civil engineers are involved in the research, development, planning, design,

construction, and operation of facilities essential to modern life. Such projects include bridges, highways, harbors, airports, multi-story structures, and environmental and hydraulic systems and their components.

Bachelor of Science Degree, College of Engineering and Technology

General Education Requirements		30[1]
GE-A: Substitute basic sciences		
GE-B: Choose from approved list[2]		9
GE-C: Choose from approved list[2]		9
GE-D: Substitute mathematics		8
GE-E:		4
Requirements for Major in Civil Engineering		102
Basic Sciences		16[3]
Physics 205a, b	6	
Chemistry 222a, c	7	
GE-A 115	3	
Mathematics 150, 250, 251, 305, and approved elective-3		17
Civil Engineering		69
General: Engineering 100, 222, 361; Engineering Mechanics 351; Civil Engineering 480	11	
Engineering Sciences	34	
Engineering 260a, b, 300, 311, 312, 313, 335	20	
Civil Engineering 314, 340, 420[4]	8	
Mining Engineering 321	3	
Science elective to be chosen from an approved list	3	
Engineering Design	16	
Civil Engineering 413, 415, 420[4], 442, 444	13	
Design elective to be chosen from an approved list	3	
Technical electives to be chosen from an approved list	8	
Total		132

[1]Courses required for the major will apply toward 15 hours of General Education making a total of 45 in that area. Only one course in the combined GE-B and GE-C areas may be selected for Pass/Fail.

[2]See departmental adviser for current approved list. Engineering requirements for GE-B and GE-C are more restrictive than those of the University as a whole.

[3]Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 16 semester hours of basic sciences approved by the department chairperson or a designate, meet this requirement.

[4]This course is used for one semester hour of design and two semester hours of engineering science for a total of three semester hours.

Courses

Safety glasses, a hand-held scientific calculator, and textbooks are required of all civil engineering students.

314-3 Introduction to Environmental Pollution. Basic engineering aspects and interrelation of air, water, and land pollution. Problems, sources, and effects of pollution. Pollution abatement. State and federal air and water quality standards and engineering systems for pollution abatement. Prerequisite: Chemistry 222c, junior standing. Elective Pass/Fail.

340-3 Structures. Loads. Types of structures. Structural materials. Safety. Analysis of statically determinate beams, trusses, and frames under static loads. Influence lines. Moving loads. Cables. Arches. Space trusses. Deflection of beams, trusses, and frames. Moment distribution for beams. Prerequisite: Engineering 311 or consent of instructor.

409-3 Hydrology and Hydraulic Engineering Design. Study of the hydrologic cycle. Streamflow analysis. Unit hydrograph. Matrix methods; synthetic methods. Frequency analysis; multivariate distributions. Hydrologic and hydraulic routings. Groundwater hydrology. Application of hydrology to the design of various hydraulic structures: small dams, spillways, drainage systems. Prerequisite: Engineering 222, 313 or equivalent or consent of instructor. Elective Pass/Fail.

410-3 Hazardous-Waste Engineering and Management. Analysis of hazardous waste

generation, storage, shipping, and disposal. Design of disposal systems. Relating hazardous-waste disposal techniques and management with governmental regulations. Prerequisite: 314, Engineering 300.
413-3 Fluid Systems Design. Two to three week projects involving the identification, modeling, analysis, and design of fluid-engineering systems. Prerequisite: Engineering 222, 313.
415-3 Wastewater Treatment. A study of the design equations used in physical, chemical, and biological treatment processes and comparison to design by state standards. Basics of bacteria and their metabolic processes in the degradation of organic wastes. Treatment and disposal of sludges produced in wastewater treatment. Advanced waste treatment processes; reuse of wastewater. Concurrent enrollment in 417 is recommended. Prerequisite: 314.
417-1 Water Quality Laboratory. Measurements of water quality parameters performed. Use of modern instrumental techniques demonstrated. Safety glasses are required. Prerequisite: 314.
419-3 Water Supply and Treatment. Water quality requirements, water sources, water treatment to include coagulation and flocculation, mixing and sedimentation basins, filtration, disinfection processes, and water softening. Consideration of toxic elements in water (sources, problems, and treatments). Prerequisite: 314.
420-3 Soil Mechanics and Foundation Engineering Design. Study of soil behavior and its application in foundation engineering. Laboratory. Soil-water systems and interactive forces; stress-strain characteristics; effective stress concept; drained and undrained conditions for saturated soils; theory of consolidation. Design of retaining walls, earthdams, shallow and deep foundations. Design project and report required. Prerequisite: Engineering 222, 311, 313, or consent of instructor.
440-3 Statically Indeterminate Structures. Analysis of trusses, beams, and frames. Approximate methods. Method of consistent deformations. Three-moment theorem. Slope deflection. Moment distribution. Column analogy. Plastic analysis. Matrix methods. Prerequisite: 340 or consent of instructor.
442-3 Structural Steel Design. An introduction to structural steel design with emphasis on buildings. Composite design. Plate girders. Rigid frames. Design project and report required. Prerequisite: 340 or consent of instructor.
443-3 Reinforced Concrete Design. Behavior and strength design of reinforced concrete beams, slabs, compression members, and footings. Design project and report required. Prerequisite: 340 or consent of instructor.
445-3 Reinforced Masonry Design. Materials. Loads. Walls. Columns and pilasters. Beams. Lateral-load resisting elements. Connections and joints. High-rise structures. Environmental features. Quality control. Design project and report required. Prerequisite: 444 or consent of instructor.
462-3 Matrix Methods of Structural Analysis. Flexibility method and stiffness method applied to framed structures. Introduction to finite elements. Prerequisite: 340 and Engineering 222 or consent of instructor.
480-1 Civil Engineering Seminar. Civil engineering as a profession. Basic concepts of professionalism. Engineers' inherent responsibilities to society, client or employer, and other members of the profession. The role of ethics in engineering. Prerequisite: senior standing.
492-1 to 4 Special Problems in Engineering. Selected engineering topics or problems in **(a)** structural engineering, **(b)** hydraulic engineering, **(c)** environmental engineering, and **(d)** applied mechanics. Four hours maximum course credit. Prerequisite: consent of instructor.
511-3 Solid Waste Collection and Disposal.
515-3 Wave Motions in Fluids.
516-3 Water Resources Management.
517-3 Industrial Waste Treatment.
518-3 Advanced Biological Treatment Processes.
544-3 Advanced Design of Reinforced Concrete.
545-3 Inelastic Metal Structures.
580-1 to 4 Seminar.
592-1 to 4 Special Investigations in Engineering.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

ELECTRICAL ENGINEERING (Department, Major, Courses)

The Department of Electrical Engineering offers courses in the major areas of electrical and computer engineering. Students who choose the electrical engineering major prepare themselves for professional and technical employment or graduate studies leading to advanced degrees. Employment opportunities exist within a wide range of organizations, such as governmental laboratories; con-

sumer goods manufacturers; and telecommunications, electric power, computer, and microelectronic companies. Flexibility in this major allows students to choose among courses in applications and theory of circuits, systems, communications, digital systems, controls, electronics, instrumentation, electromagnetics, and power systems.

The electrical engineering major is a new program being created to replace the electrical sciences and systems engineering specialization. The electrical engineering major is virutally the same as the electrical sciences and systems engineering specialization. The electrical sciences and systems engineering specialization is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology and, as soon as the electrical engineering major is accredited, the electrical sciences and systems engineering specialization will be eliminated.

Bachelor of Science Degree, College of Engineering and Technology

General Education Requirements		30[1]
GE-A: Substitute basic science		
GE-B: Choose from approved list[2]	9	
GE-C: Choose from approved list[2]	9	
GE-D: Substitute mathematics	8	
GE-E	4	
Requirements for Major in Electrical Engineering		102
Basic Sciences	18[3]	
Physics 205a,b; 255a,b	8	
Chemistry 222a,c	7	
GE-A: biological sciences[4]	3	
Mathematics 150, 250, 251, 305 and approved elective-3	17	
Engineering	67	
General: Engineering 100, 222, 361	7	
Engineering Sciences	32	
Engineering 260a, 300, 302, 325, 335[5],345, 385. Select two from 260b, 311, 312, 313. Electrical Engineering 455 (2 hours will count toward the requirement), and 465 (1 hour will count toward the requirement) plus 3 hours of engineering science from the following courses. A maximum of 1 hour for each of these courses will count toward the requirement: Electrical Engineering 421, 446, 456, 459, 487, 488. A maximum of 2 hours of Electrical Engineering 478 will count toward the requirement. A maximum of 3 hours of each of these courses will count toward the requirement: Electrical Engineering 447, 458, 461, 476, 477, 486.		
Engineering Design	18	
Electrical Engineering 443 (4 hours will count toward the requirement). Electrical Engineering 455 (1 hour will count toward the requirement), and 465 (2 hours will count toward the requirement) plus 11 hours of engineering design from the following courses. A maximum of 1 hour for each of these courses will count toward the requirement: Electrical Engineering 421, 461, 478. A maximum of 2 hours for each of these courses will count toward the requirement: Electrical Engineering 456, 459, 488. A maximum of 3 hours for each of these courses will count toward the requirement: Electrical Engineering 427, 446, 457, 487. A maximium of 4 hours of Electrical Engineering 426 will count toward the requirement.		

Approved technical electives	10
Total	132

[1]Courses required for the major will apply toward 15 hours of General Education making a total of 45 in that area. Only one course in the combined GE-B and GE-C areas may be selected for Pass/Fail.

[2]See departmental adviser for current approved list. Engineering requirements for GE-B and GE-C are more restrictive than those of the University as a whole.

[3]Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 16 semester hours of basic sciences approved by the department chairperson or a designate, meet this requirement.

[4]Or a designated substitute.

[5]A grade of *C* or better must be earned in Engineering 335 before taking 345, 385, and 455.

Courses

Safety glasses, a hand-held scientific calculator, and textbooks are required of all electrical engineering students.

421-2 Digital Computers in Applied Physical Research. Comutational techniques for matrix inversion, solution of linear equations, and characteristic roots and vectors. Least squares analysis, curve-fitting, and regression. Numerical quadrature. Solution of nonlinear equations. Solution of regular differential equations and boundary-value problems. Generation of approximate solutions. Monte Carlo techniques. Engineering and other physical examples are used as the primary teaching vehicle. Prerequisite: Engineering 222 and Mathematics 305.

426-4 Microcomputer Systems. Application and makeup of microcomputer systems. Microprocessor programming and applications with various interface devices including input/output ports, analog-to-digital and digital-to-analog converters. Lecture, laboratory, and design project. Prerequisite: Engineering 222, 325, and 345 or consent of instructor.

427-3 Digital-Systems Design I. Advanced concepts in combinational and sequential circuit design including system design procedures and register transfer languages. Prerequisite: Engineering 222, 325, and 345 or consent of instructor.

443-4 Electrical Engineering Design. Projects of an electrical engineering systems design nature. Students select a problem, define and design the various subsystems, define subsystem interface requirements, integrate the subsystems into the final design, and document the design effort. Laboratory. Not for graduate credit. Prerequisite: senior standing.

446-4 Electronic Circuit Design. Design techniques for a wide range of electronic circuits. Device and circuit modeling. Computer aided circuit design. Consideration of audio, video, and tuned amplifiers; feedback; oscillators; digital circuits. Design project. Lecture and laboratory. Prerequisite: 455 or concurrent enrollment; Engineering 345.

447-3 Applications of Electronic Devices. Physical mechanisms governing the operation of a wide variety of semiconductor devices. Applications of specific devices are used to illustrate performance characteristics and the relation between device design parameters and terminal properties. Prerequisite: Engineering 222, 312, and 345.

448-3 Laser Electronics. A study of the excitation and lasing process in various liquid, solid, and gas lasers. Techniques and principles utilized in the design of a laser system are also covered. Prerequisite: Engineering 345.

455-3 Linear Systems. Fundamental techniques in analysis of linear systems. Transient analysis of linear electrical networks and analogous systems by classical, Laplacetransform, and computer techniques. Feedback, frequency response, and state variables. Prerequisite: Engineering 335 and Mathematics 305.

456-3 Control Theory. Fundamentals and techniques for analysis and design of systems with feedback. Signal flow graphs. S-plane analysis. Frequency-domain analysis. Root locus. Stability conditions. Compensation techniques. Prerequisite: 455.

457-3 Systems Theory. In-depth study of system concepts such as interaction, anticipation, feedback, feedforward, stability, and memory. Methods which maintain flexibility and generality in dealing with all types of engineering systems. Prerequisite: Mathematics 305 or consent of instructor.

458-3 Communications Theory. Basic information theory. Fourier series and transform. Sampling theory. Amplitude modulation, frequency modulation, and pulse modulation. Signal-to-noise ratio. Statistical methods. Prerequisite: 455.

459-3 Digital Control. Analysis and design methods for discrete-data and digital control systems using tools like Z-transforms, state variable equations, stability criteria time-domain response, and frequency-domain response. Prerequisite: 455 and Engineering 325.

461-4 Bio-electricity and Biomedical Instrumentation. Interdiciplinary course primarily for life-science students. Electromagnetics relative to living systems. Circuit analysis. Functional electronics. Electric safety. Specific clinical and research instrumentation. Lecture and laboratory.

465-3 Instrumentation. Theory and practice related to measurement systems for research and industry. Instrument characteristics. Techniques in analog and digital instrumenta-

tion. Transducers. Signal conditioners. Output and display systems. Statistics of measurement. Design project. Lecture and laboratory. Prerequisite: Engineering 345.
476-3 Electromagnetic Fields I. Electric and magnetic fields using vector analysis. Evolution of Maxwell's equations through the laws of Coulomb, Gauss, Ampere, and Faraday. Concepts of energy and potential. Poisson and Laplace fields. Wave equation and plane waves. Transmission lines. Prerequisite: Mathematics 305.
477-3 Electromagnetic Fields II and Microwaves. Application of Maxwell's equations and the laws of electromagnetics to boundary-value problems, microwave devices, guiding structures, and radiating structures. Poynting's theorem and energy relationships. Lecture and laboratory. Prerequisite: 476.
478-3 Digital Communication. Principles, analysis, design, and applications of digital communication systems; transmission techniques of digital information; state-of-the-art implementation of modems, terrestrial line-of-sight, digital, microwave networks and digital satellite communication systems. Prerequisite: 455 or consent of instructor.
486-3 Electric Energy Sources. Principles and utilization of nuclear, solar, and fossil-fuel generators. Direct energy converters including thermionic, thermoelectric, and photovoltaic. Prerequisite: Engineering 385 or consent of instructor.
487-4 Power Systems Analysis I. Introduction to analysis of electric power systems. Modeling of power system components. Power system configuration. Per-unit quantities. Symmetrical components. Short circuit analysis. Prerequisite: Engineering 385.
488-3 Power Systems Engineering. Network analysis applied to power systems; load-flow concept; economic operation of power systems; stability. Prerequisite: 487.
492-1 to 3 Special Studies in Electrical Engineering. Individual projects and problems selected by student or instructor. Open to seniors only. Prerequisite: consent of instructor.
493-1 to 3 Special Topics in Electrical Engineering. Lectures on topics of special interest to students in various areas of electrical engineering. Designed to offer and test new and experimental courses in electrical sciences and systems engineering. Prerequisite: consent of instructor.
527-3 Digital Systems Design II.
536-3 Network Synthesis.
547-3 Solid-State Theory of Electronic Materials.
548-3 Advanced Electronic Devices.
556-3 Modern Control Theory.
557-6 (3, 3) Complex Systems.
577-4 Electromagnetic Fields III.
580-1 to 4 Seminar.
586-3 Power Systems Analysis II.
592-1 to 3 Special Investigations in Electrical Engineering.
593-1 to 3 Advanced Topics in Electrical Engineering.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

ENGINEERING (Major, Courses)

Engineering is the profession in which a knowledge of the mathematical and natural sciences gained by study, experience, and practice is applied with judgment to develop ways to utilize economically the materials and forces of nature for the benefit of people.

The four-year undergraduate program leading to the Bachelor of Science Degree in engineering is a modern, flexible curriculm consisting of a common core and an elective option. The common core consists of courses in basic sciences, mathematics, engineering science, and engineering design. Sometime elective courses in an area of interest. The options are:

Electrical Sciences and Systems Engineering (ESSE)
Engineering Mechanics (EM)
Thermal and Environmental Engineering (TEE)
Mining Engineering (MNGE)

The first three options (ESSE, EM, TEE) are fully accredited by the Engineering Accreditation Committee of the Accreditation Board for Engineering and Technology, Inc. (ABET), the recognized agency for accrediting engineering curricula in the United States. The Mining Engineering option has just been introduced and will be due for accreditation review during a future ABET inspection. Graduating seniors with a specialization in ESSE, EM or TEE are eligible to take

the Engineer-In-Training (EIT) examination as a first step toward registration as a Professional Engineer (PE).

Judicious selection of elective courses allows the student to prepare for a variety of areas (see individual curricula) identified with the traditional engineering disciplines (electrical, mechanical, civil, mining, etc.) and other areas that transcend the traditional disciplines. The aim of this flexibility is to provide society with graduates who can cope with a variety of engineering activities such as design, development, testing, consulting, and applied research. These activities may be directed toward the solution of contemporary problems varying from design of devices to problems of an interdisciplinary or complex-systems nature.

Students enrolled in community colleges who plan to transfer to Southern Illinois University at Carbondale should take courses that provide backgrounds in mathematics, physical sciences, social sciences, and humanities. Introductory foreign language courses are not acceptable. They may transfer at any time, but there are advantages in having completed a baccalaureate-oriented associate-degree program. Community college students can complete specific Southern Illinois University at Carbondale course requirements which include 5 hours of English composition and speech, 8 hours of university physics, 7 hours of chemistry, 11 to 14 hours of mathematics (including calculus), 5 hours of statics and dynamics, and 16 hours of social sciences and humanities. Calculus and analytical mechanics are prerequisites for most junior-level engineering courses.

Students with bachelor of science degrees in engineering can specialize further at the graduate level.

Courses

Safety glasses, an electronic calculator or a slide rule with log-log scales, and textbooks are required for all engineering students.

100-3 Introduction to Engineering. Introduction to the exciting and challenging experience of engineering. Methods and procedures utilized by the engineer for problem solving are discussed. Each student will be involved in an authentic engineering design project. A graphics and computational tools laboratory will be part of the course.

222-2 Computational Methods for Engineers and Technologists. Introduces the student to the use of digital computers and programmable calculators in the solution of technical problems. A problem-oriented computer language is used to solve relevant problems that are specifically designed for the engineering and technology student. Problem analysis, flow charting, coding, diagnostics, execution, and solution verification are discussed. Prerequisite: Mathematics 111.

260-5 (2, 3) Mechanics of Rigid Bodies. **(a)** Principles of statics; force systems; equilibrium of particles and rigid bodies; trusses, frames and machines, centroids; friction; moments of inertia of areas. Prerequisite: 100 and Mathematics 150. **(b)** Principles of dynamics; mass moment of inertia; kinematics and kinetics of particles and rigid bodies; vibrations. Prerequisite: 260a or equivalent.

300-3 Engineering Thermodynamics I. Study of the basic principles of thermodynamics. Engineering analysis of physical systems based on the first and second laws. Properties of pure substance (ideal gas behavior, non-ideal gas behavior, and equations of state.) Mixtures of ideal gases. Introduction to cycle analysis. Prerequisite: Chemistry 224 or equivalent and Physics 205a. Physics prerequisite waived with consent of instructor.

302-3 Engineering Heat Transfer. An introductory study of the rate mechanisms of thermal energy transport both in steady state and in transient conditions, with and without phase change. Prerequisite: 260a.

311-3 Mechanics of Deformable Bodies. Introduction to the mechanics of deformable bodies. Forces and deformations. Torsion. Stresses in beams. Deflections of beams. Statically indeterminate beams. Columns. Laboratory supply fee: $3. Prerequisite: 260a.

312-3 Materials Science Fundamentals. Sub-microscopic structure of solids, including electronic states, atomic and molecular arrangement, structural imperfections and atomic diffusion, and their relationship to macroscopic properties; physical properties of semiconductors, dielectric and magnetic properties of materials; metallic, organic, and ceramic materials and their mechanical properties; composite materials. Laboratory supply fee, $5. Prerequisite: Physics 205 and Mathematics 250.

313-3 Fluid Mechanics. A broad introduction to the concepts and principles of fluid statics, kinematics, and dynamics. The fundamental laws for fluid motion in the form of Euler's, Bernoulli's, impulse-momentum and work-energy equations. Dimensional analysis

and dynamic similtude. Resistance to flow: deformation drag, surface drag, form drag. Introduction to compressible fluid flow. Laboratory supply fee, $3. Prerequisite: 260b.

325-3 Introduction to Digital Systems. Number systems, Boolean algebra, combinational circuits, minimization, sequential circuits, logic devices, and computer basics. Prerequisite: 222.

335-3 Electric Circuits. Foundation course in electric circuits. Basic laws and concepts of linear circuits. Analysis of AC and DC circuits by mesh and nodal methods, Thevenin's and Norton's theorems, superposition principle, and phasor notation. Transients. Prerequisite: Mathematics 250.

345-3 Electronics. Functional electronics and basic signal processing. Characteristics and typical applications of analog and digital electronic modules. Operational amplifiers. Fundamentals of transistors. Use of basic instruments. Lecture and laboratory. Laboratory fee of $10 to help defray cost of consumable items. Prerequisite: 335.

361-2 Engineering Economics in Design. Procedures for evaluating the relative economic merits of engineering projects and designs. These procedures compare alternate engineering estimates, evaluate engineering effectiveness, and proceed toward decision making based on economic and engineering optimization. Course materials are present in professional engineering examinations. Prerequisite: Mathematics 111 or equivalent.

385-3 Electromechanical Energy Conversion. Principles of electromechanical energy-conversion and related circuitry. Magnetic circuits. Transformers. DC machines. Single-phase and polyphase machines. Polyphase circuits. Prerequisite: 335.

455-3 Engineering Geology. (See Geology 455.)

ELECTRICAL SCIENCES AND SYSTEMS ENGINEERING
(Major [Engineering])

Students who choose the electrical sciences and systems engineering option prepare themselves for professional employment or graduate studies in areas associated with electrical or systems engineering. Employment opportunities exist within a wide range of organizations, such as governmental laboratories; consumer-goods manufacturers; and telecommunications, electric-power, computer, and microelectronic companies. Flexibility in this option allows students to choose among courses in applications and theory of circuits, systems, communications, digital systems, controls, electronics, instrumentation, electromagnetics, and power systems.

Bachelor of Science Degree, College of Engineering and Technology

ENGINEERING MAJOR — ELECTRICAL SCIENCES AND SYSTEMS ENGINEERING SPECIALIZATION

General Education Requirements		30[1]
GE-A: Substitute basic science		
GE-B: Choose from approved list[2]		9
GE-C: Choose from approved list[2]		9
GE-D: Substitute mathematics		8
GE-E		4
Requirements for Major in Engineering		102
Basic Sciences		18[3]
Physics 205a,b; 255a,b	8	
Chemistry 222a,c	7	
GE-A: biological sciences[4]	3	
Mathematics 150, 250, 251, 305 and approved elective-3		17
Engineering		33
General: Engineering 100, 222, 361	7	
Engineering Sciences	26	
Engineering260a, 300, 302, 325, 335[5], 345, 385. Select two from 206b, 311, 312, 313.		
Specialization in Electrical Sciences and Systems Engineering		34
Engineering Sciences	6	
Electrical Engineering 455 (2 hours will count toward the requirement), and 465 (1 hour will count toward the require-		

ment) plus 3 hours of engineering science from the following courses. A maximum of 1 hour for each of these courses will count toward the requirement: Electrical Engineering 421, 446, 456, 459, 487, 488. A maximum of 2 hours of Electrical Engineering 478 will count toward the requirement. A maximum of 3 hours of each of these courses will count toward the requirement: Electrical Engineering 447 458, 461, 476, 477, 486.

Engineering Design 18

Electrical Engineering 443 (4 hours will count toward the requirement). Electrical Engineering 455 (1 hour will count toward the requirement) and 465 (2 hours will count toward the requirement), plus 11 hours of engineering design from the following courses. A maximum of 1 hour for each of these courses will count toward the requirement: Electrical Engineering 421, 461, 478. A maximum of 2 hours for each of these courses will count toward the requirement: Electrical Engineering 456, 459, 498. A maximum of 3 hours for each of these courses will count toward the requirement: Electrical Engineering 427, 446, 457, 487. A maximum of 4 hours of Electrical Engineering 426 Will count toward the requirement.

Approved technical electives 10

Total 132

[1]Courses required for the major will apply toward 15 hours of General Education making a total of 45 in that area. Only one course in the combined GE-B and GE-C areas may be selected for Pass/Fail.

[2]See departmental adviser for current approved list. Engineering requirements for GE-B and GE-C are more restrictive than those of the University as a whole.

[3]Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 16 semester hours of basic sciences approved by the department chairperson or a designate, meet this requirement.

[4]Or a designated substitute.

[5]A grade of *C* or better must be earned in Engineering 335 before taking 345, 385, and 455.

Courses

For courses in the electrical sciences and systems engineering specialization, see the listing under the electrical engineering major.

ENGINEERING MECHANICS (Major [Engineering] Courses)

The engineering mechanics option is designed to help students prepare for a broad professional career in theoretical and applied mechanics, or to prepare for graduate studies. Inherent in the program is a broad foundation in the basic engineering sciences. Coursework is offered by the department in theoretical and experimental stress analysis, vibrations, design, mechanics of materials, fluid mechanics, soil mechanics and foundations, structural analysis and design, numerical methods, and supersonic flow. The student, with the help of an adviser, is encouraged to choose a sequence of technical electives to achieve a solid and coherent specialization. Graduates of this specialization are successfully employed in industries such as aerospace, automotive, equipment manufacture, research, consulting nuclear, and many others.

Bachelor of Science Degree, College of Engineering and Technology

ENGINEERING MAJOR — ENGINEERING MECHANICS SPECIALIZATION

General Education Requirements ..... 30[1]

GE-A: Substitute basic sciences

GE-B: Choose from approved list[2]	9
GE-C: Choose from approved list[2]	9
GE-D: Substitute mathematics	8
GE-E	4
Requirements for a Major in Engineering	102
Basic Sciences	18[2]
Physics 205a,b; 255a,b	8
Chemistry 222a, c	7
GE-A Biology, Zoology, or Botany	3
Mathematics 150, 250, 251, 305 and approved elective-3	17
Engineering	37
General: Engineering 100, 222, 361	7
Engineering Sciences	20
Engineering 260a,b, 300, 302, 311, 312, 313, 335	
Specialization in Engineering Mechanics	40
General: Engineering Mechanics 351	3
Engineering Sciences: Engineering Mechanics 414, 441[4], 446, 447 ,Civil Engineering 340	15
Engineering Design: to be chosen from approved list	15
Technical electives in approved areas	7
Total	132

[1]Courses required for the major will apply toward 15 hours of General Education making a total of 45 in that area. Only one course in the combined GE-B and GE-C areas may be selected for Pass/Fail.

[2]See departmental adviser for current approved list. Engineering requirements for GE-B and GE-C are more restrictive than those of the University as a whole.

[3]Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 18 semester hours of basic science approved by the department chairperson or a designate, meet this requirement.

[4]This course is used for one semester hour of design and two semester hours of engineering science for a total of three semester hours.

Courses

Safety glasses, a hand-held scientific calculator, and textbooks are required of all engineering mechanics students.

351-3 Numerical Methods in Mechanics. An introduction to the available numerical methods and techniques which are employed to solve engineering problems with special emphasis devoted to areas of mechanics involving stress analysis, vibrations, fluid flows, mechanisms, and structures. Prerequisite: Engineering 222, 311, 313 or consent of instructor.

414-3 Intermediate Fluid Mechanics. A development of the governing equations of motion including the continuity, Navier-Stokes, and energy equations. Application of these equations to potential, viscous, and compressible flows. Isentropic flow of a perfect gas. Normal and oblique shock waves, Prandtl-Meyer flow. Prerequisite: Engineering 313 or equivalent.

441-3 Vibration in the Design of Machines and Structures. Theory: Review of second order ordinary linear differential equations. Matrices and determinants. Phasor and trigonometric solutions, Duhamel integrals, Fourier Series. Applications: motor and equipment mounts, deflection of rotating shafts, resonance, dynamic balancing, vibration absorbers, vibrometer and accelerometer design, analysis of accelerometer and vibrometer data, seismic loads on buildings, vehicle suspensions, vibration of geared systems, vibration linkages. Prerequisite: Engineering 222, 260b and Mathematics 305.

446-3 Materials Engineering. A macroscopic overview of the bahavior of engineering materials including metals and composite materials. Topics covered include the elastic behavior of materials; failure theories and plastic behavior; brittle fracture and fatigue, impact loadings, thermal stresses, and creep. Prerequisite: 222, 312.

447-3 Intermediate Mechanics of Materials and Structures. An introduction to the equations of elasticity. Applications of these equations to beam bending, torsion, and plane stress/plane strain problems. Energy methods. Introduction to elastic-plastic material behavior. Prerequisite: Engineering 222, 311.

448-3 Experimental Stress Analysis. Development of theoretical equations of stress and strain and their transformations. Equations of equilibrium; compatibility equations; stress functions; applications of these equations in stress measurements; study of optical, mechanical, and electrical strain gauges; brittle coating; Moire' technique; and two-dimensional photoelasticity. Laboratory supply fee $10. Prerequisite: Engineering 311.

449-3 Intermediate Dynamics. Kinematics and kinetics of plane and three-dimensional motion. Principles of work and energy applied to the motion of rigid bodies. Principle of impulse-momentum applied to variable mass and rigid body systems. Space mechanics. Prerequisite: Engineering 222, 260, Mathematics 305.
458-3 Photoelasticity. Optics related to photoelasticity; theory of photoelasticity; photoelastic materials; analysis techniques; two-dimensional and three-dimensional photoelasticity; birefringent coatings; scattered light photoelasticity; application of photoelastic methods. Laboratory. Prerequisite: Engineering 311.
470-3 Engineering Analysis. Methods of solution for basic ordinary differential equations with applications to engineering systems. Basic methods of solution for partial differential equations with emphasis on applications of the Laplace, Poisson, and heat equations to engineering problems. Basic vector field theory; transformation theorems. Simulation techniques applied to engineering systems. Prerequisite: Mathematics 305 or equivalent.
492-1 to 4 Special Problems in Engineering. Selected engineering topics and/or problems in (a) Stress analysis, (b) Fluid flow analysis, (c) Structural engineering, (d) Computational mechanics, (e) Materials engineering, and (f) Dynamics. Four hours maximum course credit. Prerequisite: consent of instructor.
510-3 Computational Fluid Dynamics.
512-3 Introduction to Theoretical Elasticity.
513-3 Mechanics of Viscous Fluids.
514-3 Mechanics of Inviscid Fluids.
518-3 Introduction to Turbulence.
520-3 Finite Element Analysis.
540-3 Elastic Stability.
542-3 Theory of Plates.
550-3 Advanced Compressible Fluid Flow.
561-3 Intermediate Vibrations.
580-1 to 4 Seminar.
592-1 to 4 Special Investigations in Engineering.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

MINING ENGINEERING (Department, Major [Engineering], Courses)

Mining engineers engage in design, development, and management of surface and underground mining systems for exploitation of mineral deposits from the earth's crust. The mining engineering option prepares graduates to meet the challenges of the mining engineering profession. Coursework in the option includes such areas as surface and underground mining systems, mine ventilation, ground control and rock mechanics, mineral and coal processing, material handling systems, mineral economics, and mine health and safety engineering. Facilities include modern, well-equipped rock mechanics, mine ventilation and mineral processing laboratories.

After completing the option, the graduate may work in an engineering or management position for mining industries, equipment manufacturing concerns, research organizations, or government agencies. The coursework also provides good preparation for further study at the graduate level.

The mining engineering option of the engineering major will be replaced by the mining engineering major in the near future. This change will not affect coursework or student requirements in any way.

Bachelor of Science Degree, College of Engineering and Technology

ENGINEERING MAJOR – MINING ENGINEERING SPECIALIZATION

General Education Requirements	30[1]
GE-A: Substitute basic science	
GE-B: Choose from approved list[2]	9
GE-C: Choose from approved list[2]	9
GE-D: GE-D 101, 118, 153 and substitute mathematics	8
GE-E	4
Requirements for Major in Engineering	103
Basic Sciences	18[3]

Physics 205a,b; 255a,b	8	
Chemistry 222a and 222c	7	
GE-A: biological science[4]	3	
Mathematics 150, 250, 251, 305 and approved elective-3		17
Engineering		30
General: Engineering 100, 222, 361	7	
Engineering Sciences	23	
Engineering 260a,b; 300, 302, 311, 313, 335, 385		
Specialization in Mining Engineering		38
General: Geology	3	
Engineering Science	16	
A maximum of 1 hour for each of these courses will count toward the requirement: MNGE 435, 455. A maximum of 1½ hours in each of these courses will count toward the requirement: MNGE 410, 425. A maximum of 2 hours for each of these courses will count toward the requirement: MNGE 320, 415, 420, 431. A maximum of 3 hours of MNGE 400 will count toward the requirement.		
Engineering Design	19	
A maximum of 1 hour for each of these courses will count toward the requirement: MNGE 320, 415, 420, 431, 455. A maximum of 1½ hours in each of these courses will count toward the requirement: MNGE 410, 425. A maximum of 2 hours for each of these courses will count toward the requirement: MNGE 435, 440, 450. A maximum of 3 hours of MNGE 475 will count toward the requirement. Select one of the following: MNGE 460, 465		
Total		133

[1]Courses required for the major will apply toward 15 hours of General Education making a total of 45 in that area.
[2]See departmental adviser for current approved list. Engineering requirements for GE-B and GE-C are more restrictive than those of the University as a whole. Also, only one course in the combined GE-B and GE-C areas may be selected for Pass/Fail.
[3]Transfer students holding the associate degree in a baccalaureate-oriented program and having at least 18 semester hours of basic science approved by the department chairperson or a designate meet this requirement.
[4]Or designated substitute.

Courses

For course descriptions see courses listed under the mining engineering major.

THERMAL AND ENVIRONMENTAL ENGINEERING (Department, Major [Engineering] Courses)

The option in thermal and environmental engineering prepares graduates to provide engineering solutions to problems such as optimum energy utilization, conservation of resources and environmental protection by working in or across the areas associated with traditional engineering disciplines. This option allows study of energy and environmental areas. The energy areas include heat and mass transfer, thermal systems and processes such as solar, coal conversion, electric power plants, refrigeration, engines. The environmental areas include wastewater, potable water, air pollution, waste heat, solid waste, and industrial waste. Previous graduates are successfully practicing in manufacturing and energy industries, in consulting engineering firms, in state and federal agencies, and in graduate studies.

Bachelor of Science Degree, College of Engineering and Technology

ENGINEERING MAJOR — THERMAL AND ENVIRONMENTAL ENGINEERING SPECIALIZATION

General Education Requirements		30[1]
GE-A: Substitute basic science		
GE-B: Choose from approved list[2]	9	
GE-C: Choose from approved list[2]	9	
GE-D: Substitute mathematics	8	
GE-E	4	
Requirements for Major in Engineering		102
Basic Sciences	18[3]	
Physics 205a,b; 255a,b	8	
Chemistry 222a and 222c	7	
GE-A biological science	3	
Mathematics 150, 250, 251, 305 and approved elective-3	17	
Engineering	27	
General: Engineering 100, 222, 361	7	
Engineering Sciences	20	
Engineering 260a, b, 300, 302, 313, 335, and one of 325, 345 or 385		
Specialization in Thermal and Environmental Engineering	40	
Engineering Sciences	12	
Civil Engineering 314; select three from the following: Engineering 311, 312, 455, Mechanical Engineering 301, 400, 405, 464, 465		
Engineering Design	19	
Mechanical Engineering 404, 408, 435, 3 hours of 443; select two from the following: Mechanical Engineering 402, 406, 416, 442, 444, 475, Civil Engineering 409, 415, 419		
Engineering Laboratory	1	
Mechanical Engineering 401 or 418 or Civil Engineering 417		
Other required courses	1	
One hour of Mechanical Engineering 443		
Approved technical electives	7	
Total		132

[1]Courses required for the major will apply toward 15 hours of General Education, making a total of 45 in that area.
[2]See departmental adviser for current approved list. Engineering requirements for GE-B and GE-C are more restrictive than those of the University as a whole. Also, only one course in the combined GE-B and GE-C areas may be selected for Pass/Fail.
[3]Transfer student holding the associate degree in a baccalaureate-oriented program, and having at least 18 semester hours of basic science approved by the department chairperson or designate, meet this requirement.

Courses

For course descriptions of courses in the thermal and environmental engineering specialization, see listing under the mechanical engineering major and the civil engineering major.

MECHANICAL ENGINEERING AND ENERGY PROCESSES (Department)

The Department of Mechanical Engineering and Energy Processes offers the thermal and environmental engineering option in the baccalaureate engineering program (see engineering); this program and option are accredited by the

Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

A new Bachelor of Science in mechanical engineering major described below is available.

MECHANICAL ENGINEERING (Major, Courses)

Mechanical engineering is one of the most broadly based of the traditional engineering disciplines. Mechanical engineers design and develop a wide variety of systems for conversion, transmission, and utilization of energy; for material processing and handling and packaging; for transportation; for environmental control; and for many other purposes for the benefit of humanity. Therefore the curriculum contains a broad foundation in mathematics and the basic and engineering sciences, followed by more concentrated study in energy and machine systems.

Mechanical engineers may be found in a variety of assignments including planning and design, research and development, supervision of installation and operation of complex systems, and management.

It is recommended that students desiring the degree Bachelor of Science with a mechanical engineering major concurrently pursue the accredited thermal and environmental engineering option in the baccalaureate major in engineering. Then, through appropriate selection of electives in that option and with additional coursework, one can earn both degrees with a total of 150 hours minimum.

Bachelor of Science Degree, College of Engineering and Technology

General Education Requirements ..... 30[1]
- GE-A: Substitute basic science
- GE-B: Choose from approved list[2] 9
- GE-C: Choose from approved list[2] 9
- GE-D: Substitute mathematics 8
- GE-E 4

Requirements for Major in Mechanical Engineering 102
- Basic Sciences ..... 18[3]
  - Physics 205a,b; 255a,b 8
  - Chemistry 222a,c 7
  - GE-A: biological sciences 3
- Mathematics 150, 250, 251, 305, and approved elective-3 17
- Mechanical Engineering 67
  - General: Engineering 100, 222, 361 7
  - Engineering Sciences 34
    - Engineering 260a,b, 300, 302, 311, 312, 313, 335 and one of 325, 345 or 385
    - Mechanical Engineering 310; either 301 or 400; and 2 semester hours of Engineering Mechanics 441
  - Engineering Design 16
    - 1 semester hour of Engineering Mechanics 441; Mechanical Engineering 406, 475; 3 semester hours of 443; select 6 semester hours from 402, 404, 408, 416, 435, 442, 444, 472, and Civil Engineering 413

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[1]Courses required for the major will apply toward 15 hours of General Education, making a total of 45 in that area.

[2]See departmental adviser for current approved list. Engineering requirements for GE-B and GE-C are more restrictive than those of the University as a whole. Also, only one course in the combined GE-B and GE-C areas may be selected for Pass/Fail.

[3]Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 18 semester hours of basic science approved by the department chairperson or a designate, meet this requirement.

Other required courses	6
Mechanical Engineering 401, 403; 1 semester hour of 443; Engineering Mechanics 351	
Approved technical electives	4
Total	132

Courses

Safety glasses, an electronic calculator or a slide rule with log-log scales, and textbooks are required of all mechanical engineering students.

301-3 Engineering Thermodynamics II. Combined first and second law analysis; availability and reversibility. Third Law. General thermodynamic relations. Reactive systems. Thermodynamic equilibrium. Phase Rule. Applications. Thermodynamics of one dimensional fluid flow. Prerequisite: Engineering 300.

310-3 Mechanisms/Kinematics. Introduction to the kinematics of machines. Topics include absolute and relative displacement, velocity, and acceleration and calculation methods. Applications include cams, linkages, rotary to/from linear motion transformation mechanisms, steady to intermittent motion mechanisms. Cardan and constant velocity joints and similar machine components. Prerequisite: Engineering 260b.

400-3 Power and Refrigeration Cycles. Use of engineering thermodynamics in analysis of power and refrigeration cycles. Detailed treatment of various gas and vapor power cycles including combined gas and steam cycles. Thermodynamics of combustion. Gas and vapor refrigeration cycles. First and Second Law analysis and turbo-machinery. Prerequisite: Engineering 300.

401-1 Thermal Measurements Laboratory. Study of basic physical measurements used in the thermal sciences. Calibration techniques for temperature sensors. Transient and steady-state error analysis. Thermal and transport property measurements. Prerequisite: Engineering 302.

402-3 Heat Exchange Equipment Design. Thermal radiation. Radiation with participating media. Combined convection and radiation. Principles of furnace design. Moist air heating and cooling coils. Enthalpy potential. Cooling coil design. Refrigerant evaporators and condensers. Two-phase flow regions. Freon heat exchangers. Heat pipes. Prerequisite: Engineering 222, 300, 302, and 313.

403-1 Mechanical Engineering Measurements Laboratory. To familiarize students with the use of instruments to measure time, distance, velocity, acceleration, strain, fluid flow, and turbulence. Instruments include micrometers, laser distance meters, stroboscopes, oscilloscopes, strain gages and read out equipment, analog/digital convertors, pressure transducers, radioactive particle tracers, and polariscopes and related equipment. Prerequisite: Engineering 311, 313, 335.

404-4 Optimization of Process Systems. The simulation and optimization of industrial process systems based on the principles of thermodynamics, heat transfer, mass transfer, and fluid mechanics. The analysis and correlation of experimental engineering data, and the use of the correlated data in process simulations. The mathematical modeling of the performance of energy transfer and environmental treatment equipment (pumps, turbines, mass and heat exchangers, etc.) from analytical predictions and experimental results. The application of the principal optimization methods encountered in engineering practice. Computer applications. Prerequisite: Engineering 361, Mathematics 305 and senior standing in engineering.

405-3 Internal Combustion Engines and Gas Turbines. Operation and performance characteristics of Otto, Diesel, Wankel engines and gas turbines. Methods of engine testing, types of fuels and their characteristics, fuel metering systems, engine combustion analysis as related to engine performance, fuel characteristics and air pollution, exhaust gas analysis, and air pollution control. Prerequisite: 301.

406-3 Thermal Systems Design. Application of the principles of engineering analysis to the design of thermal systems. Consideration of such systems as refrigerators, building air conditioning systems, spacecraft control systems, solar heating systems, and gas liquefying systems. Prerequisite: Engineering 300, 302.

408-3 Energy Conversion and Conservation Systems. Constraints on design and use of energy conversion and conservation systems: energy resources; environmental impact; energy effectiveness; engineering economy. Principles of advanced energy conversion systems; Nuclear fission; combined gas and steam cycles; magnetohydrodynamics; cogeneration of electricity and process steam; coal conversion to synfuels; electric heat pump. Industrial energy management principles. Emphasis on analysis and engineering design of engineering systems. Prerequisite: Engineering 300.

416-3 Air Pollution Control. Engineering control theory, procedures, equipment, and economics related to particulate and gaseous emissions control. The environmental impact of controlling emissions. Sampling and analysis procedures. Laboratory work includes

design, construction, and use of a source sampling system. Safety glasses are required. Concurrent enrollment in 418 is recommended for students in thermal and environmental engineering option. Prerequisite: 314.

418-1 Air Quality Laboratory. This laboratory consists of design, construction, and use of systems to measure and analyze ambient atmospheric pollution. Safety glasses required. Prerequisite: concurrent enrollment in 416.

423-3 Waste Heat Management. Energy sources and waste heat produced in their utilization. Management of heated surface water effluents to minimize their ecological impact; chemical, physical, and biological. Methods of waste heat disposal from electric power plants. Selection and design of waste heat disposal systems. Prerequisite: 314, Engineering 300, or consent of instructor

435-3 Heat and Mass Transfer Processes. Review of single phase and two phase heat transfer. Heat exchanger design. Mass transfer principles and processes. Processes involving simultaneous heat and mass transfer. Prerequisite: 302.

442-3 Solar Heating Design — Residential Systems. Design of solar heating systems for residence with emphasis on passive systems. Heat flow and heat loss. Estimating heat loss and heating requirements of buildings. Energy conserving building design. Predicting performance and economics of a system. Prerequisite: Engineering 300, 313.

443-4 Engineering Design. Projects of an engineering systems design nature. For a specific project, define and design the various subsystems, define subsystem interface requirements, integrate the subsystems into the final design, and document and design effort. Laboratory. Not for graduate credit. Prerequisite: senior standing in engineering.

444-3 Solar Energy Design — Commercial and Industrial Systems. Energy auditing and energy conservation techniques for commercial and industrial buildings. Active solar heating and cooling systems. Computer simulation models. Economic evaluation. Industrial process heating systems. Prerequisite: Engineering 300, 302, 313.

464-2 Physical Metallurgy and Ceramics. Structure/composition determination for bulk and surfaces. Thermodynamics of solutions. Phase transformations. Structure and properties of aggregate and composite materials. Corrosion. Dislocation theory. Plastic flow. Fracture. Failure analysis. Prerequisite: Engineering 222, 312.

465-3 Materials Preparation and Processing. Forming and processing of materials. Solidification: single crystal techniques, plane front and dendritic solidification, microsegregation, nonequilibrium structures. Vapor deposition: fractionation, physical vapor deposition, ion plating, sputtering. Thermal processing of solids: homogenization, crystallization, precipitation. Powder preparation, sintering, and densification. Deformation processing: rolling, forging, extrusion, drawing, preferred orientation. Prerequisite: 464.

472-3 Materials Selection for Design. Interaction of design parameters and materials selection parameters; comparison of alternative materials, thermomechanical processing, selection of materials, processing and fabrication to meet the requirements of a design in the student's areas of specialization. Prerequisite: 222, 312.

475-3 Mechanical Systems Design. Working stresses, shafting, springs, belts, other machine elements. Lubrication theory and practice, gears, belt drives, chains. Taught from text, association manuals, manufacturer's handbooks. Prerequisite: Engineering 222, 260b, 311 or equivalent.

492-1 to 5 Special Problems in Engineering. Engineering topics and problems selected by either the instructor or the student with the approval of the instructor. Five hours maximum course credit. Prerequisite: senior standing and consent of instructor.

500-3 Advanced Engineering Thermodynamics.
501-3 Transport Phenomena.
502-3 Advanced Heat Transfer.
503-3 Convective Heat Transfer.
504-3 X-Ray Diffraction and the Solid State.
505-3 Physical Properties of Crystalline Materials.
506-3 Solidification Processing.
507-3 Combustion Phenomena.
520-3 Coal Conversion and Combustion Processes.
525-3 Small Particle Phenomena.
531-4 Reaction Engineering and Rate Processes.
532-3 Separation Processes and Equilibrium Operations.
580-1 to 4 Seminar.
581-1 Scientific Evaluation and Research in Engineering.
592-1 to 4 Special Investigations in Engineering.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

MINING ENGINEERING (Department, Major, Courses)

The mining engineering major will replace the mining engineering option of the engi-

neering program in the near future. This change will not affect coursework or student requirements in any way.

Mining engineers engage in planning, design, development, and management of surface and underground mining operations for exploitation of the earth's mineral deposits. The mining engineering program prepares graduates to meet the challenges of the mining industry. Coursework in the program includes such areas as surface and underground mining systems, mine ventilation, ground control and rock mechanics, mineral and coal processing, material handling systems, mineral economics, mine health and safety engineering, operations research, and computer-aided mine design. Facilities include modern, well-equipped rock mechanics, mine ventilation and mineral processing laboratories.

After completing the program, the graduate may work in an engineering or management position for mining industries, equipment manufacturing concern, research organizations, or government agencies. The coursework also provides strong preparation for further study at the graduate level.

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General Education Requirements ..... 30[1]
- GE-A: Substitute basic science
- GE-B: Choose from approved list[2] 9
- GE-C: Choose from approved list[2] 9
- GE-D: GE-D 101, 118, 153 and substitute mathematics 8
- GE-E 4

Requirements for Major in Mining Engineering 103
- Basic Sciences ..... 21[3]
  - Physics 205a,b; 225a,b 8
  - Chemistry 222a,c 7
  - Geology 390 3
  - GE-A: biological science[4] 3
- Mathematics 150, 250, 251, 305, and approved elective-3 17
- Engineering 65
  - General: Engineering 100, 222, 361 7
  - Engineering Science 39
    Engineering 260a,b, 300, 302, 311, 335, 385; MNGE 400; A maximum of 1 hour in each of these courses will count toward the requirement; MNGE 435, 455. A maximum of 1 1/2 hours in each of these courses will count toward the requirement: MNGE 410, 425; A maximum of 2 hours in each of these courses will count toward the requirement: MNGE 320, 415, 420, 431
  - Engineering Design 19
    MNGE 440, 450, 475. A maximum of 1 hour in each of these courses will count toward the requirement: MNGE 320, 415, 420, 431, 455. A maximum of 1 1/2 hours in each of these courses will count toward the requirement: MNGE 410, 425. A maximum of 2 hours in each of these courses will count toward the require-

[1]Courses required for the major will apply toward 15 hours of General Education, making a total 45 in that area.

[2]See departmental adviser for current approved list. Engineering requirements for GE-B and GE-C are more restrictive than those of the University as a whole. Also only one course in the combined GE-B and GE-C areas may be selected for Pass/Fail.

[3]Transfer students holding the associate degree in a baccalaureate-oriented program, and having at least 18 semester hours of basic science approved by the department chairperson or a designate, meet this requirement.

[4]Or designated substitute.

ment: MNGE 435. Select one of the following: MNGE 460, 465.

Total 133

Courses

320-3 Surveying for Engineers. Analysis and application of tacheometry and mine correlation. Aerial surveying. Engineering design of haulage curves. Production measurement. Geophysical and borehole surveying. Land-Surveying. Prerequisite: Mathematics 251, junior standing in engineering.

400-3 Principles of Mining Engineering. Basic principles of mineral exploration, development, and processing. Environmental problems related to mineral development. Prerequisite: junior standing in engineering.

401-1 Mining Environmental Impacts and Permits. Socio-economic impacts of mining industry. Analyzing the markets for coal and its products. Mining operations and related environmental impacts. Mining permits. Prerequisite: 400 or consent of instructor.

410-3 Underground Mining Systems Design. Study of coal property evaluation. Underground mining methods. Design of mine production and its ancillary systems and subsystems. Prerequisite: 400.

411-2 Mine Machinery. Analysis and design of underground and surface mining machinery. Equipment and parts selection. System development. Preventive maintenance. Prerequisite: 410.

413-2 Mine Power Systems. Study of electrical, hydraulic and pneumatic mine power systems. Selection and design of power systems and their components. Related economics and decision making criteria. Prerequisite: 410, and Engineering 385, or equivalent, or consent of instructor.

415-3 Surface Mining and Land Reclamation. Surface mining systems for coal and noncoal minerals. Development of mining operations, equipment selection, mine planning and design, land reclamation, erosion and sedimentation control. Prerequisite: 400.

420-3 Mineral and Coal Processing. Impurities in coal and their impact on the market. Impurities liberation and separation methods. Product preparation. Coal washability characteristics. Flow sheet development. Recovery of minerals from tailings, slurry ponds and mine waste. Economics of mineral processing. Prerequisite: 400 .

425-3 Mine Ventilation Systems Design. Study of the theories and practice of natural and forced mine ventilation. Fan and mine characteristics. Ventilation network analysis. Mine ventilation design and problem analysis. Prerequisite: 410 and Engineering 313.

431-3 Rock Mechanics and Ground Control. Analysis of stress and strain, elementary elasticity, stress distribution around mine openings and pillars, engineering properties of rocks, support of mine workings, subsidence, design of mine openings. Laboratory. Prerequisite: 410 and Engineering 311.

435-3 Operations Research and Computers in Mine Design. Mine systems analysis, operations research and statistics in decision making, production engineering, mine planning, optimization, linear programming, computer simulation. Prerequisite: 410, 415 and Engineering 222.

440-2 Design of Material Handling Systems. Study of material handling and waste disposal methods. Material handling systems selection. Systems design and development. Material handling economics. Prerequisite: 410 and concurrent enrollment in 415.

450-2 Computer-Aided Mine Design. Design of mining and minerals processing systems with the aid of computer software. Computer-aided mineral deposit characterization; extraction, haulage, ventilation, reclamation, and ground control subsystem design; coal processing and blending circuit definition; and production economics evaluation. Not for graduate credit. Prerequisite: 415, 425, 431, 440, or concurrent enrollment.

455-2 Mine Health and Safety Engineering. Analysis of mine hazards and accidents, sealing and recovery of mines, design of mine emergency plans, safety methods, and health hazard control plans. Prerequisite: 410, and 415.

460-2 Underground Mine Design Projects. Projects in planning and design of underground mining systems. Evaluate a potential mine site; select appropriate mining method; define and design mine subsystems; intergrate subsystems and procedures into a preliminary mine design; and optimize operations from exploration to closure. Two two-hour laboratories per week. Not for graduate credit. Prerequisite: 450 or concurrent enrollment.

465-2 Surface Mine Design Projects. Projects in planning and design of surface mining systems. Evaluate a potential mine site; select appropriate mining method; define and design mining and reclamation subsystems; integrate subsystems and procedures into a preliminary mine design; and optimize operations from exploration to bond release. Two two-hour laboratories per week. Not for graduate credit. Prerequisite: 450 or concurrent enrollment.

470-3 Experimental Methods in Rock Mechanics. Supplement theoretical knowledge gained in 431 with laboratory experiments. Physical property tests for specific gravity,

moisture, density porosity of rocks. Unconfined and confined compressive strength, tensile strength, shear strength, photoelasticity, static and dynamic strain measurement systems, field instrumentation techniques. Prerequisite: 431.
475-3 Design of Mine Excavations. Rock classification; design of shafts, slopes, tunnels, and underground chambers; support requirements; design of slopes; design of underground mining systems from ground control point of view; design of impoundments. Prerequisite: 415 and 431.
492-1 to 5 Special Problems in Mining Engineering. Topics and problems selected either by the instructor or the student with the approval of the instructor. Five hours maximum course credit. Prerequisite: senior standing and consent of instructor.
511-3 Advanced Ground Control.
519-2 Advanced Mine Environment and Pollution Control.
530-3 Mine Management.
535-3 Rock Fragmentation.
540-3 Production Engineering in Coal Mines.
545-3 Tunnelling.
550-1 to 3 Internship.
580-1 to 2 Seminar.
592-1 to 5 Special Investigations.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Engineering Mechanics

(SEE ENGINEERING)

Engineering Technology (Major, Courses)

Engineering technology is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational spectrum between the technician and the engineer at the end of the spectrum closest to the engineer.

All curricula in engineering technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (formerly the Engineers' Council for Professional Development.) These curricula are the civil engineering technology, electrical engineering technology, and mechanical engineering technology specializations. For each curriculum, a minimum of 30 hours in engineering technology courses must be taken in residence at Southern Illinois University at Carbondale.

Bachelor of Science Degree, College of Engineering and Technology

ENGINEERING TECHNOLOGY MAJOR – CIVIL ENGINEERING TECHNOLOGY SPECIALIZATION

The civil engineering technology specialization is primarily suited for those students interested in pursuing careers with highway departments or in construction industries. However, the broad range of studies insures a solid technical background in many areas of civil engineering technology. Graduates of the program are employed by railroads, coal companies, consulting engineering firms, state and local agencies, and various construction firms.

General Education Requirements	45
Requirements for Major in Engineering Technology	76
GE-D 118	(2)
Chemistry 115	(3)
Mathematics 111, 150, 250	(3)+10
Physics 203a, b; 253a, b	(6)+ 2
Engineering 222	2

Engineering Technology 103, 202, 245a, 260a,b, 310a, 311, 313a, 314a, 315, 318a,c, 363a, 364a, 365, 390, 415, approved technical electives-11 62
Electives 3

Total 124

ENGINEERING TECHNOLOGY MAJOR – ELECTRICAL ENGINEERING TECHNOLOGY SPECIALIZATION

The electrical engineering technology specialization is designed to prepare technologists who are capable of technical design and who can contribute to the development and production of electrical circuits and devices. In addition, graduates are capable of participation in the planning and installation of power distribution systems and operating and maintaining complex electrical systems. Graduates of the program are employed in communications, power, electronics, sales, manufacturing, and other fields.

General Education Requirements 45
Requirements for Major in Engineering Technology 76
GE-D 118 ..... (2)
Chemistry 115 ..... (3)
Mathematics 111, 150, 250 ..... (3)+10
Physics 203a,b; 253a,b ..... (6)+ 2
Engineering 222 2
Engineering Technology 103, 245a, 260a, b, 304a,b, 313a, 318a, 332a,b, 390, 403a,b, 437a,b, 438a, approved technical electives-11 62
Electives 3

Total 124

ENGINEERING TECHNOLOGY MAJOR – MECHANICAL ENGINEERING TECHNOLOGY SPECIALIZATION

The mechanical engineering technology specialization is designed to prepare graduates for a career in the power industry; provides a background in general mechanical technology. Graduates are employed in industries which have a need for technologists trained in the generation, transmission, and utilization of mechanical energy.

General Education Requirements 45
Requirements for Major in Engineering Technology 76
GE-D 118 ..... (2)
Chemistry 115 ..... (3)
Mathematics 111, 150, 250 ..... (3)+10
Physics 203a,b; 253a,b ..... (6)+ 2
Administrative Sciences 301 3
Engineering 222 2
Engineering Technology 103, 104, 245a, 260a,b, 301a, 308a, 311, 313a,b, 318a,b, 320, 323, 390 424a,b, approved technical electives-10 59
Electives 3

Total 124

Courses

Safety glasses, a suitable calculator, and textbooks are required for most of the following courses.

103-3 Engineering Drawing I. Principles and practices of engineering drawing. Orthographic (multiview) projection; sections and conventions; the spatial relationship of points, lines, and planes; and revolution. Drawing supplies and problems workbook required, costing approximately $15.

104-3 Engineering Drawing II. Principles and practices of engineering drawing. Representation of mechanical components; dimensioning; tolerancing; location and form tolerancing; fluid power diagrams; and welding symbols. Prerequisite: 103.

202-2 Structural Detailing. Principles and practices of engineering drawing as applied to structural design with emphasis on reinforced concrete and structural steel drawings. Drawing supplies required, cost $8. Prerequisite: 103.

236-2 Electrical Instrumentation. Theory and use of D.C. and A.C. instruments; measurement and error, units, standards, meters, bridges, oscilloscopes, electronic instruments, instruments for generation and analysis of waveforms, counters, and transducers. Laboratory. Prerequisite: Mathematics 111.

244-3 Mechanical Systems for Industry. A mechanical fundamentals course covering such topics as gears, belts, other machine parts, fluidics, and lubrication techniques. No credit granted toward mechanical engineering technology graduation requirements.

245-6 (3, 3) Electrical Systems for Industry. **(a)** Fundamentals of electrical lighting and industrial wiring. Motor types, synchronous motors, fractional-horsepower motors, applications, bearings, lubrication and rebuilding. Laboratory. Prerequisite: Mathematics 111. **(b)** Introduction to electronics: laboratory practices, oscilloscopes, meters, components, power supplies, amplifiers, and characteristics of semiconductor devices. Laboratory. Prerequisite: Mathematics 111.

260-6 (3, 3) Principles of Mechanics. **(a)** Statics. Concepts of force systems, moments, and equilibrium of rigid bodies, analysis of trusses and frames, determination of centroids, center of gravity, and moments of inertia, calculation of shear and moment diagrams in beams. Prerequisite: Mathematics 150 or concurrent enrollment. **(b)** Dynamics. Friction; particles and rigid bodies in translation, rotation, and plane motion; relative motion; impulse and momentum; work and energy. Prerequisite: 260a, Mathematics 150.

263-3 Mine Surveying. Development of basic surveying practices and use of surveying equipment, linear and angular measurements; mapping, calculations; applications of mine surveying. Laboratory. Civil engineer's scale required costing approximately $3. Field notebook for each course costs approximately $1. No credit granted toward civil engineering technology graduation requirements. Prerequisite: Mathematics 111.

301-6 (3, 3) Refrigeration and Air Conditioning. **(a)** Discussion of refrigerating cycles. Refrigeration at more than one level. Operation and ratings of various types of compressors, evaporators, condensers, and automatic controls used in commercial refrigerating sytems. Heat flow problems in condensers, evaporators, and cooling towers. Prerequisite: 313a. **(b)** Control of temperature and humidity in buildings, or other large areas. Air handling equipment, duct systems, and air distribution within the space. Fundamental principles and techniques for cooling and dehumidification for comfort. Equipment and control systems. Prerequisite: 313a.

304-7 (4, 3) Electrical Circuits. **(a)** Solutions to D.C. steady-state networks by branch, equivalent circuit, loop current, and node voltage methods. Study of network theorems. Extension of these topics to A.C. steady-state by use of the phasor transform. Laboratory. Prerequisite: Mathematics 150 or concurrent enrollment. **(b)** Further topics in A.C. circuits; frequency response, resonance, filters, transformers and magnetic coupling, complex power, and dependent sources. Transient response by the classical solution of differential equations and by Laplace transform methods. Laboratory. Prerequisite: 304a, Mathematics 250 or concurrent enrollment.

308-6 (3, 3) Machine Design. **(a)** Strength and safety considerations in design of machine parts. Fatigue and stress concentrations, bearings, brakes, clutches and springs. Applications of the principles of mechanics to problems of design and development, mechanisms. Prerequisite: 260a. **(b)** Combined stresses, gearing, curved beams, high speed cams, thick cylinders, and flat plates. Student undertakes the design of a complete machine. Prerequisite: 308a, 311.

310-6 (3, 3) Heavy Construction. **(a)** The fundamental elements of heavy construction methods and equipment. Prerequisite: 260a or consent of instructor. **(b)** Construction planning, estimating, and management procedures and techniques. Civil engineer's scale required. Prerequisite: 310a.

311-3 Strength of Materials. Stress and strain; torsion, bending, and combined stresses; beam deflections; behavior of columns. Laboratory. Prerequisite: 260a.

313-6 (3, 3) Elementary Heat Power. **(a)** The fundamental laws of heat power, properties of systems, liquids, vapors, and liquid-vapor mixtures. **(b)** Engine cycles and applications. Must be taken in a,b sequence. Prerequisite: Mathematics 150.

314-6 (3, 3) Soil Mechanics. **(a)** Laboratory determination of the basic properties of soils; components of soil surveys; engineering soil classifications; fundamental study of soil properties. Laboratory. Laboratory notebook required, costing approximately $4. **(b)** Soil

water and seepage; frost action in soils; soil stabilization; stress distribution in soils and introduction to foundation design. Prerequisite: 260a, 314a.

315-3 Elementary Structural Analysis. Applications of the principles of mechanics to the determination of forces and deflections of statically determinate structures; approximate methods of determining member forces in indeterminate frames; study of various types of structures and loading conditions. Prerequisite: 260a.

318-8 (2, 3, 3) Hydraulics and Pneumatics. **(a)** Fundamentals of fluid statics, basic fluid flow concepts for idealized fluids, flow networks, and introduction to viscous fluids. Prerequisite: 260a **(b)** Viscous flow in closed conduits, basic hydraulic machinery and fluid power systems. Laboratory. Prerequisite: 318a, Engineering 222. **(c)** Flow measuring devices; collection, storage and distribution of water; collection and transportation of sewage; pumps and pumping. Laboratory. Prerequisite: 318a.

320-3 Mechanical Laboratory. Various types of measuring instruments; gas analysis; lubricant testing, and testing of thermodynamic systems, including internal combustion engines, fans, heat exchangers, and refrigeration systems. Laboratory. Safety glasses required, costing approximately $4. Prerequisite: 313a.

322-3 Internal Combustion Engines. The design and principles of operation of internal combustion engines. The Otto, Diesel, and Brayton cycles and the fundamental thermodynamic laws involved. Prerequisite: 313a.

323-2 Operation of Public Utilities. (See Economics 323.) Prerequisite: GE-B 211 or consent of instructor.

332-6 (3, 3) Electromechanical Principles and Devices. **(a)** Introduction to D.C. and A.C. machinery. Theory and operating characteristics of D.C. generators and D.C. motors. Laboratory. Prerequisite: 304a or concurrent enrollment. **(b)** Theory and operating characteristics of polyphase and single-phase A.C. motors. Special applications of A.C. and D.C. motors. Laboratory. Safety glasses required, costing approximately $5. Prerequisite: 304a or concurrent enrollment.

342-2 Technology Design. An elective project on any technical subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Prerequisite: senior standing.

363-9 (3, 3, 3) Surveying. **(a)** Use and care of surveying instruments; principles of surveying practice and computations. Laboratory. Prerequisite: 103, Mathematics 111. **(b)** U.S. Public Land Systems and boundary surveys; route surveying; field astronomy. Laboratory. Prerequisite: 363a. **(c)** Topographic surveying; precise surveying; geodesy. Laboratory. Prerequisite: 363a. Civil engineer's scale, costing approximately $3 and field notebook, costing approximately $1, required for each course.

364-7 (4, 3) Highway Engineering Technology. **(a)** Highway surveys, plans and computations. Highway design, drainage, roadside development and subgrade structure. Study of types of base courses, pavements, and surfaces. Highway construction and maintenance. Laboratory. Prerequisite: 363a or consent of instructor. **(b)** Highway administration, planning, economics, and finances. Traffic engineering. Introduction to railroad and airport design. Prerequisite: 364a.

365-3 Water Treatment and Sanitation. Introduction, description, and design of potable water and wastewater facilities. Chemical coagulation, sedimentation, disinfection, and hardness removal of water. Sanitation measures and control of communicable diseases. Prerequisite: senior standing in civil engineering technology or consent of instructor.

390-3 Cost Estimating. (Same as Industrial Technology 390.) Study of the techniques of cost estimation for products, processes, equipment, projects, and systems. Prerequisite: Mathematics 111.

403-8 (4, 4) Electronics Technology. **(a)** Fundamental theory and operation of semiconductor diodes and bipolar transistors, incremental models for transistors, biasing, stability, and feedback of single and multistage amplifiers. Parameters and applications of field-effect transistors, opto-electronic devices, thyristors, unijunction transistors and amorphous semi-conductors. Laboratory. **(b)** Parameters and applications of operational amplifiers, linear integrated circuits, monolithic voltage regulators, and digital integrated circuits. Laboratory. Must be taken in a,b sequence. Prerequisite: 304b.

415-4 Elementary Structural Design. Introduction to structural properties of steel and reinforced concrete. Design of basic steel elements: tension members, beams, columns, and connections. Basic design of reinforced concrete elements: beams, columns, and footings. Use of AISC and ACI codes. Prerequisite: 311 (or concurrent enrollment), 315.

424-6 (3, 3) Power Systems Technology. **(a)** Fundamentals of basic power plant operation and equipment; e.g., fuels, steam generators, heat exchangers, turbines, pumps, and nuclear reactors. Prerequisite: 313a. **(b)** A study of cycles, heat balances, efficiencies and power plant economics. Student is exposed to the design considerations and trade-offs associated with the total design of a power plant. Prerequisite: 313b, 318b, 424a.

426-4 (2, 2) Photogrammetry. **(a)** Cameras and photography; flight planning; mathematical principles of vertical and tilted aerial photographs; ground control methods; extension of control; stereoscopy and parallax; basic instruments, stereo plotters, and latest developments. Laboratory. Prerequisite: 363a or consent of instructor. **(b)** Rectification of tilted

photographs; stereoscopic plotting instruments; principles and use of oblique photography; analytic photogrammetry and new concepts. Laboratory. Prerequisite: 426a or consent of instructor.

437-6 (3,3) Communications Systems Technology. **(a)** Theory and applications of radio frequency transmission lines, waveguides, optical fibers, wave propagation, and antennas. Laboratory. Prerequisite: 304b. **(b)** Theory and applications of analog and digital communications systems. Laboratory. Prerequisite: 403, 437a.

438-8 (4, 4) Design of Control and Digital Systems. **(a)** Fundamentals of control systems; equations of electrical, mechanical, hydraulic, and thermal systems; applications of Laplace transforms, transfer functions, block diagrams and flowgraphs. Computer implemented graphical analysis and design methods: root locus, frequency response. Nyquist diagrams, and compensator design. Continuous-systems simulation laboratory. Prerequisite: 340b, Engineering 222. **(b)** Design of digital systems; logic operations; number systems and applications. Digital systems simulation laboratory. Prerequisite: Engineering 222.

439-3 Microprocessor Applications and Hardware. A study of microprocessor applications and hardware based on microprocessor manufacturer's literature. System configuration, hardware, requirements, typical instruction set, programming, input/output techniques, interfaces, and peripheral devices. Prerequisite: 438b or concurrent enrollment.

492-1 to 6 Special Problems in Industry and Technology. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected technical problems. Prerequisite: consent of instructor.

English (Department, Major, Courses)

The major in English is 36 semester hours at least half of which must be taken at Southern Illinois University at Carbondale. The English major may choose from four specializations.

Students who wish to declare English as a major should consult the director of undergraduate programs in English early in their college careers. Continuing students who wish to declare an English major should petition the Department of English for admission to the department. Transfer students should bring their transcripts and evaluation of transfer credit. Thereafter, all English majors must have their advance registration forms signed by an adviser in the Department of English. Only English courses which are completed with at least a *C* will fulfill a major requirement. Deviations from regular programs must have prior written department approval.

Students who wish to construct an inter-departmental major in English and certain related fields may do so in consultation and with the approval of an English department adviser.

All students are strongly urged to supplement their English majors through the study of classical and modern languages, as well as the study of foreign literature in translation. Majors preparing for graduate school should take two years of a foreign language.

Although a minor field is not required, students are urged to consider complementary minor fields such as foreign languages and literatures, history, philosophy, and journalism.

ENGLISH CORE CURRICULUM

All students majoring in English will take the following courses:

English 302a, 302b, 309, 390, and 471 or 472.

Bachelor of Science Degree, College of Education or
Bachelor of Arts Degree, College of Liberal Arts

Students who wish to become certified teachers of English may pursue their majors as follows:

General Education Requirements 45

GE-C 330 must be taken as a part of the GE-C requirement.

Requirements for Major in English 36

Professional Education Requirements ..... 25[1]
See Teacher Education Program, page 66.
Electives 14
Students in the College of Liberal Arts must complete the college requirements as a part of the 14 hours. *(See Page 75)*

Total 120

In addition to the core curriculum teacher training candidates will take the following courses:

English 300; 485; a 400-level course in English literature before 1800; a 400-level course in American literature before 1900; a 400-level course in continental literature; two electives chosen from 300 and 400-level English courses.

[1]In order to qualify for entrance into the teacher education program and for a student teaching assignment, students must have a grade point average of at least 2.50 (*A* is 4.0) in the major.

Bachelor of Arts Degree, College of Liberal Arts

A student may wish to pursue one of several specializations in the College of Liberal Arts. The degree earned and the requirements for the degree are as follows:

General Education Requirements 45
GE-C 330 must be taken as a part of the GE-C requirement.
Supplementary College Requirements
Refer to catalog section titled College of Liberal Arts 6-8
Requirements for Major in English 36
Electives 31-33

Total 120

ENGLISH MAJOR — GENERAL SPECIALIZATION

In addition to the core curriculum, students will take seven electives from the 200, 300, and 400-level courses in English, with several courses at the 400-level. At least one of these elective courses must be a course in English literature before 1800, one a course in American literature before 1900 and one a course in continental literature. In addition, at least one of these elective courses must be in each of the three major genres: prose fiction, poetry, and drama. Students planning to enter graduate school are strongly urged to take two years of a foreign language or the equivalent. Students should consult with their departmental adviser to achieve a suitable range and breadth of course work.

ENGLISH MAJOR — GENERAL WRITING AND CREATIVE WRITING SPECIALIZATION

In addition to the core curriculum, students should take at least two courses selected from English 281, 282, 283; at least two courses from 381, 382, 383; and English 492. Elective courses outside the Department of English may be accepted toward the major with prior written approval of the Department of English.

ENGLISH MAJOR — PREPROFESSIONAL SPECIALIZATION

In addition to the core curriculum, majors interested in such fields as law, business, and government will take the following courses:

English 300, 391, 445; four electives, which may concentrate on a special interest, and which, with the consent of the departmental adviser, may include courses in other departments.

ENGLISH MAJOR — DEPARTMENTAL HONORS PROGRAM SPECIALIZATION

The department honors program is open to all undergraduate English majors who maintain a 3.5 grade point average in their English major courses and a 3.25

average overall. Determination of eligibility will be made at the beginning of the student's second semester of junior level work.

In addition to the core curriculum, the honors student should take at least four elective courses on the 400 level. 200 and 300 creative writing courses may count as electives for students initially enrolled in the creative writing option, and English 300 will count as an elective for students initially enrolled in the teaching option. In addition, the student must take at least one English honors seminar, English 497, for three hours of credit, and write a senior honors research paper. If the student elects, the paper will count for six hours of credit toward the English major. The student may elect to write a paper worth only three hours of credit. In that case the student must take a second English honors seminar worth three hours of credit.

The senior honors paper will be an independent research project undertaken through mutual agreement between the honors student and a member of the continuing English faculty.

Minor

The minor in English is a minimum of 18 semester hours. Minors are available with several specializations, and the following are listed as examples only. Students interested in English as a minor are invited to confer with the director of undergraduate programs in English, or an adviser in the Department of English.

ENGLISH MINOR – TEACHING SPECIALIZATION

For students who wish to meet the minimum certification requirements for teaching English in the secondary schools, the following courses are required: English 209; 300; 390; 471 or 472; and two of the following: English 302a, 302b, 309, 445.

For the following minor specializations, these courses are recommended as part of the 18 hour minimum.

ENGLISH MINOR – PREPROFESSIONAL SPECIALIZATION

English 209; 300; 391; 445; 471 or 472.

ENGLISH MINOR – GENERAL WRITING OR CREATIVE WRITING SPECIALIZATION

Writing minors should take at least one course from English 290, 390; two courses from English 281, 282, 283; and two courses from English 381, 382, 383.

ENGLISH MINOR – WORLD LITERATURE SPECIALIZATION

English 209, 390; and four courses from 425, 438, 445, 455, 465. For further information, see catalog section titled Comparative Literature.

ENGLISH MINOR – OTHER SPECIALIZATIONS

Students wishing to arrange other specializations in English should consult the director of undergraduate programs in English or one of the departmental advisers.

Courses

199-1 Special Topics and Projects. Topics and projects, including laboratory work, to aid students in developing specialized writing skills. Prerequisite: consent of department.

201-3 Introduction to Drama. Students will read and discuss plays of different types and periods. Prerequisite: GE-D 101 and GE-D 117; or GE-D 101 and GE-D 118; or GE-D 101 and GE-D 119; or GE-D 120; or equivalent. Elective Pass/Fail.

202-3 Introduction to Poetry. Students will read and discuss poems of different types and periods. Prerequisite: GE-D 101 and GE-D 117; or GE-D 101 and GE-D 118; or GE-D 101 and GE-D 119; or GE-D 120; or equivalent. Elective Pass/Fail.

209-3 Introduction to the Forms of Literature. Poetry, drama, and fiction. Statement and illustration of the techniques of the three genres over the range of American and English literature. Prerequisite: GE-D 101 and GE-D 117; or GE-D 101 and GE-D 118; or GE-D 101 and GE-D 119; or GE-D 120; or equivalent.

210-3 Introduction to Fiction. Students will read and discuss a variety of American and European short stories and novels. Prerequisite: GE-D 101 and GE-D 117; or GE-D 101

and GE-D 118; or GE-D 101 and GE-D 119; or GE-D 120; or equivalent. Elective Pass/Fail.
281-3 Creative Writing: Beginning Fiction. Introduction to basic techniques of writing creative prose with emphasis on characterization, plot, and narrative devices. Study and application of various methods of short story writing. Exercises. Critiques. Prerequisite: GE-D 120 or 119 or consent of instructor. Elective Pass/Fail.
282-3 Creative Writing: Beginning Poetry. Introduction to basic theories and techniques of poetry writing with emphasis on metrics, forms, and poetic stanzas. Study and application of each of these general aspects of writing poetry. Exercises. Critiques. Prerequisite: GE-D 120 or 119 or consent of instructor. Elective Pass/Fail.
283-3 Creative Writing: Beginning Drama. Introduction to basic problems and techniques of dramatic presentation. Emphasis on producing works for the amateur market, with a secondary purpose of advising future teachers of possibilities of using plays, skits, etc., as teaching aids. Exercises in creating original dramatic material. Critiques. Prerequisite: GE-D 120 or 119 or consent of instructor. Elective Pass/Fail.
290-3 Intermediate Expository Writing. Designed for any University student, to improve writing skills beyond freshman composition. Based on individual needs and areas of specialization. Prerequisite: GE-D 101 and GE-D 117; or GE-D 101 and GE-D 118; or GE-D 101 and GE-D 119; or GE-D 120; or equivalent.
300-3 Introduction to Language Analysis. Nature of language and linguistic inquiry. Dialectology, usage, and chief grammatical descriptions of present day American English. Required of teacher training candidates. Elective Pass/Fail.
302A-3 Literary History of England, Beowulf to 1800. Social, historical, and intellectual backgrounds of English literature with selected readings from each period from Beowulf to 1800. Elective Pass/Fail.
302B-3 Literary History of England, 1800 to Present. Social, historical, and intellectual backgrounds of English literature with selected readings from each period from 1800 to the present. Elective Pass/Fail.
309-3 A Literary History of the United States. Social, historical, and intellectual backgrounds of American literature, with selected readings for each period. Elective Pass/Fail.
325-3 Black American Writers. Poetry, drama, and fiction by Black American writers. Prerequisite: GE-D 101 and GE-D 117; or GE-D 101 and GE-D 118; or GE-D 101 and GE-D 119; or GE-D 120; or equivalent. Elective Pass/Fail.
332-3 Folktales and Mythology. A survey of non-classical mythology and folktales, emphasizing its medieval and modern aspects as well as the use of folklore in major literary works. Readings will cover Norse, Celtic, and Middle Eastern mythology, their use by English and American writers, such as Tennyson, Irving, and Hawthorne and the popular folk-ballad. Students are encouraged to explore other aspects of world folklore in their independent research papers. Elective Pass/Fail.
335-3 The Short Story. Reading and discussion of short stories by American and European authors. Prerequisite: GE-D 101 and GE-D 117; or GE-D 101 and GE-D 118; or GE-D 101 and GE-D 119; or GE-D 120; or equivalent. Elective Pass/Fail.
365-3 Shakespeare. Reading and discussion of the major plays. Prerequisite: GE-D 101 and GE-D 117; or GE-D 101 and GE-D 118; or GE-D 101 and GE-D 119; or GE-D 120; or equivalent. Elective Pass/Fail.
381-3 Creative Writing: Advanced Fiction. Emphasis on the long short story and novella with exercises and study oriented to more sustained forms of prose than the short story. Theories and techniques of extended fictional forms treated. Critiques. Prerequisite: 281 or consent of instructor. Elective Pass/Fail.
382-3 Creative Writing: Advanced Poetry. Concentration on modern forms and theories of poetry. Writing assignments and exercises in the application of various poetic techniques, primarily 20th century American. Critiques. Prerequisite: 282 or consent of instructor. Elective Pass/Fail.
383-3 Creative Writing: Advanced Drama. Concentration on serious literary statements through drama, and on practical instruction in writing extended and concentrated dramatic forms. Presentation of various dramatic theories through the study of representative plays. Drama writing exercises and critiques. Prerequisite: 283 or consent of instructor. Elective Pass/Fail.
390-3 Advanced Composition. Expository writing. Prerequisite: *C* average in GE-D 120; or *C* average in GE-D 101 and 117, 118, or 119; or equivalent. Open to English majors and minors or with consent of department.
391-3 Precision in Reading and Writing. To improve the student's ability to read and write with precision and clarity, depending on reading complex material (requiring no particular background for comprehension) and on writing precis of it. Prerequisite: grade of *B* in GE-D 117, 118, or 119; or *C* in GE-D 120; or *C* in English 290.
393-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance. Both students and faculty suggest ideas. May be repeated as the topic varies. Prerequisite: departmental approval. Elective Pass/Fail.
400-3 Introduction to English Linguistics. Methods of structuralizing: phonetics, phonemics, morphemics, syntax. Especially recommended for students preparing to teach English to native speakers. Elective Pass/Fail.

401-3 Modern English Grammars. A review of modern approaches to grammatical analysis in English language (only), this course is specifically designed to meet needs of in-service or prospective teachers of composition and language arts, particularly at the secondary and college levels.
403-3 History of the English Language. A survey of the development of the language from Indo-European to modern English with special emphasis on Middle and Early Modern changes. Elective Pass/Fail.
404-3 Middle English Literature Excluding Chaucer. Elective Pass/Fail.
405-3 Middle English Literature: Chaucer. Elective Pass/Fail.
412-3 English Non-Dramatic Literature: The Renaissance. Elective Pass/Fail.
413-3 English Non-Dramatic Literature: The Restoration and Earlier Eighteenth Century. Elective Pass/Fail.
414-3 English Non-Dramatic Literature: The Later Eighteenth Century. Elective Pass/Fail.
417-3 Black Literature. Studies in American and African Black literature, with major emphasis upon contemporary Black expression. Elective Pass/Fail.
421-3 English Romantic Literature. Elective Pass/Fail.
422-3 Victorian Poetry. Victorian poets: Tennyson, Browning, Arnold, and other poets in England. Elective Pass/Fail.
423-3 Modern British Poetry. Elective Pass/Fail.
425-3 Modern Continental Poetry. Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece. Elective Pass/Fail.
426-3 American Poetry to 1900. Trends in American poetry to 1900 with a critical analysis of the achievement of the more important poets. Elective Pass/Fail.
427-3 American Poetry from 1900 to the Present. The more important poets since 1900. Elective Pass/Fail.
436-3 to 9 (3 per topic) Major American Writers. Significant writers of fiction and nonfictional prose from the Puritans to the 20th Century. May be repeated only if topic varies, and with consent of department. Elective Pass/Fail.
438-3 Intellectual Backgrounds of American Literature. The relationship of basic ideas in America to American literature. Elective Pass/Fail.
445-3 Cultural Backgrounds of Western Literature. A study of ancient Greek and Roman literature, Dante's *Divine Comedy,* and Goethe's *Faust,* as to literary type and historical influence on later Western writers. Elective Pass/Fail.
451-3 Eighteenth Century English Fiction. Defoe through Jane Austen. Elective Pass/Fail.
452-3 Nineteenth Century English Fiction. Victorian novel: 1830-1880. Elective Pass/Fail.
453-3 Modern British Fiction. Elective Pass/Fail.
455-3 Modern Continental Fiction. Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse. Elective Pass/Fail.
458-3 American Fiction to the Twentieth Century. The novel in America from its beginnings to the early 20th Century. Elective Pass/Fail.
459-3 American Fiction of the 20th Century. Trends and techniques in the American novel and short story since 1914. Elective Pass/Fail.
460-3 Elizabethan and Jacobean Drama. Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Greene, Peele, Marlowe, Heywood, Dekker; and Jacobean drama: such Jacobean and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley. Elective Pass/Fail.
462-3 English Restoration and 18th Century Drama. After 1660, representative types of plays from Dryden to Sheridan. Elective Pass/Fail.
464-3 Modern British Drama. Elective Pass/Fail.
465-3 Modern Continental Drama. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain, and Portugal. Elective Pass/Fail.
468-3 American Drama. The rise of the theater in America, with readings of plays, chiefly modern. Elective Pass/Fail.
471-3 Shakespeare: The Early Plays, Histories, and Comedies. Elective Pass/Fail.
472-3 Shakespeare: The Major Tragedies, Dark Comedies, and Romances. Elective Pass/Fail.
473-3 Milton. A reading of a selection of the minor poems, of *Paradise Lost, Paradise Regained, Samson Agonistes,* and the major treatises. Elective Pass/Fail.
481-3 Literature for the Adolescent. Criteria for evaluation of literary materials for junior and senior high school, with emphasis on critical approaches in selection of literature. Elective Pass/Fail.
484-3 Non-Print Media and English. Theory and application of film and other non-print media to the study and teaching of English. Especially emphasized is the relationship between print and non-print communications systems and verbal and non-verbal systems. Prerequisite: consent of instructor.
485-3 Problems in Teaching Composition, Language, Literature and Reading in High School.
490-3 Expository Writing. An advanced expository writing course designed to improve the student's ability to write clear and effective expository prose. The main work of the course will consist of the writing and revising of a set of essays that reflect a variety of

rhetorical strategies. Required readings will provide models and subject matter for some of the assignments. Prerequisite: GE-D 101 and 117, 118, 119 or 120 or equivalent; English 390 or equivalent.
491-3 Technical Writing. An all-university course designed to teach advanced academic and professional (non-fictional) writing skills. Prerequisite: GE-D 117, 118, or 119, or equivalent. Elective Pass/Fail.
492-3 to 9 Creative Writing: Senior Writing Project. The topic varies among the writing of poetry, drama, or prose. A directed written project will be submitted at the end of the semester in prose, poetry, or drama. A collection of short stories or poems, a novel or play of what instructors consider to be acceptable quality will fulfill the Senior Project requirement. An alternative to the Senior Project may be an internship in a publishing firm if appropriate arrangements can be made by the department. Prerequisite: consent of the instructor. Elective Pass/Fail.
493-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Elective Pass/Fail.
494-3 Literary Criticism Applied to Film. The course will deal with the history and theories of literary criticism. Students will have the opportunity to apply concepts of literary criticism to a series of films which they will view. A $10 screening fee is required. Elective Pass/Fail.
495-3 Literary Criticism. Includes both history of criticism and modern criticism. Open only to seniors and graduate students. Elective Pass/Fail.
496-3 to 6 (3, 3) Topics in Women's Literature. (Same as Women's Studies 454.) Syllabus, which may vary with instructor, identifies new areas of research on women authors and includes an examination of appropriate critical models that have emerged in feminist criticism.
497-3 to 9 (3 per topic) Senior Honors Seminar. Topics vary yearly. May be repeated as the topic varies. Prerequisite: departmental approval and undergraduate status.
499-1 to 6 (1 to 3, 1 to 3) Readings in Literature and Language. For English majors only. Prior written departmental approval required. May be repeated as the topic varies, up to the maximum of six semester hours.
501-3 Research in Composition.
502-3 Introduction to Graduate Study and Teaching College Composition.
506-3 to 12 Anglo-Saxon and Medieval Studies.
510-3 to 12 Renaissance Studies.
516-3 to 12 Restoration and 18th Century Studies.
530-3 to 12 19th Century English Literature.
533-3 to 12 Early American Literature.
539-3 to 12 Modern American Literature.
550-3 to 12 Modern British Literature.
579-3 to 12 (3 per topic) Studies in Modern Literature.
581-3 to 9 (3 per topic) Problems in Teaching English.
593-3 to 12 Special Topics.
595-1 to 9 Independent Readings.
596-3 to 12 Language Studies.
600-1 to 36 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Environmental Design (Major [Graduate only] Courses)

Courses

411-1 to 6 Workshop. Current topics and problems facing professionals in the field of design. Discussion, reports, lectures, and other methods of analyzing and working on environmental design problems. Emphasis stated in announcement. Maximum of three hours per topic. Prerequisite: senior standing and consent of instructor.
412-1 to 3 Seminar. Special topics and projects considered at stages of design, production, sale, or use. Individual preparations and presentations required. Prerequisite: senior standing or consent of instructor.
413-1 to 4 Readings. Supervised study of selected, relevant literature in area of individual interest related to environmental design. Prerequisite: senior standing or consent of instructor.
414-1 to 6 Special Problems. Directed independent work and study in areas determined by individual needs and interests. Maximum of three hours counted toward master's degree. Prerequisite: senior standing or consent of instructor.
500-3 Research Methods and Problem Solving.
504-3 Systems in Environmental Design.
508-3 Environmental Integration.
510-3 to 6 Practicum.

531-3 Spatial Concepts in Design I.
532-4 Spatial Concepts in Design II.
541-3 Application of Science and Technology to Design.
551-3 Anticipatory Design.
598-1 to 6 Project.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Finance (Department, Major, Courses)

The financial implications of decisions in both business and government are daily becoming more complex. Within the firm, financial considerations permeate the concentrations of research, engineering, production, and marketing. Within governmental activities, sophisticated financial techniques are becoming increasingly important. The financial executive thus takes a key role in the successful management of both business and governmental operations.

The finance curriculum offers two areas of specialization to meet the varied interests of students: (1) financial management and (2) financial institutions. The financial management program provides the background for a career in the financial operations of business firms and public institutions. The financial institutions specialization is designed for those interested in the operations of financial intermediaries and financial markets.

Bachelor of Science Degree, College of Business and Administration

General Education Requirements		45
Professional Business Core (See page 63.)		40-41
Requirements for Major in Finance		21
Finance 323, 325, 421	9	
Specialization (Choose one)	12	
Financial Institutions		
Select four: 326, 327, 328, 372, 424, 474, 475, Economics 416		
or		
Select four: 327, 328, 350, 378, 379, 301	12	
Financial Management		
Select one additional upper division accounting course	3	
Select three: 327, 372, 474, 475, 480	9	
Electives		13-14
Total		120

Courses

271-3 Business Law I. Legal problems arising from situations involving contracts and agency and business organizations. Not pass/fail for business majors. Elective Pass/Fail.
300-3 Internship in Finance. Designed to provide an opportunity to relate certain types of work experience to the student's academic program and objectives. Approved internship assignments with cooperating companies in the fields of finance are coordinated by a faculty member. Not repeatable for credit. Prerequisite: consent of department chairperson. Mandatory Pass/Fail.
301-1 to 6 Readings in Finance. Readings in classical and current writing on selected topics in various areas in the field of finance. Prerequisite: consent of department chairperson. Mandatory Pass/Fail.
320-3 Introduction to Business Finance. Principal problems of managing the finance function of a business firm. Emphasis on asset acquisition and management, and financial structure planning and management. Prerequisite: Accounting 230, Economics 215, Administrative Sciences 208 and junior standing.
323-3 Investments. Survey of the problems and procedures of investment management; types of investment risks; investment problems of the individual as well as the corporation. Prerequisite: 320.
325-3 Financial Markets. Operations of capital markets. Sources and uses of funds of financial institutions. Prerequisite: 320 or concurrent enrollment.
326-3 Management of Financial Institutions. Principal policies and problems which con-

front top management. Emphasis on liquidity, loans, investments, deposits, capital funds, financial statements, organization structure, operations, personnel, cost analysis, and public relations. Prerequisite: 320 and junior standing.

327-3 Insurance. Fundamentals of insurance and risk management including a study of selected insurance contracts and alternative methods of controlling risk exposures. Prerequisite: junior standing. Elective Pass/Fail.

328-3 Real Estate. Problems of real estate ownership, management, financing, and development. Prerequisite: junior standing. Elective Pass/Fail.

350-3 Small Business Financing. Financing problems involved in raising venture capital, debt type funds, expansion funds, and government sponsored funding. Budgeting, working capital management, and fixed asset planning are covered. Prerequisite: Accounting 230 and Economics 215 or consent of department; junior standing. Elective Pass/Fail.

370-3 The Legal and Social Environment of Business. An examination of the legal, social, and political forces that influence business and businessmen. Particular attention to the role of law as an agency of social control in the modern business society. Prerequisite: junior standing. Elective Pass/Fail.

372-3 Business Law II. Legal problems arising from situations involving sales, commercial paper, secured transactions, and property. Prerequisite: junior standing.

377-3 Real Estate Finance. A study of the instruments, techniques, and institutions of real estate finance; sources of and methods for obtaining funds for real estate investments; mortgage risk analyses. Prerequisite: 328 or consent of instructor and junior standing.

378-3 Real Estate Appraisal. The technique and art of real estate valuation using market comparison, cost, and income approaches. Includes appraisal principles, procedures, and applications. Prerequisite: 328 or consent of instructor and junior standing.

379-3 Real Estate Law. A survey of legal principles applicable to real property, including the following: conveyances, titles, land descriptions, rights and duties of ownership, and the law of real estate brokerage. Prerequisite: 328 or consent of instructor and junior standing.

421-3 Management of Business Finance. The principal problems of managing the financial operations of an enterprise. Emphasis upon analysis and solutions of problems pertaining to policy decisions. Prerequisite: 320.

422-3 Acquisitions, Divestments, and Recapitalization. A study of the issues involved in developing financial plans for external growth, divestment, and recapitalization. The case approach is emphasized in the course. Prerequisite: 320.

424-3 Portfolio Theory and Management. Examination of modern concepts relating to management of security portfolios. Topics include security analysis, Markowitz Portfolio Theory, efficient market hypothesis, portfolio performance measurement, risk, and portfolio construction. Prerequisite: 320, 323, or consent of instructor.

474-3 Working Capital Management. Short-term budgeting and forecasting techniques used in business; alternative approaches to working capital management including consideration of certainty, risk and uncertainty; theory and applications in management of cash, marketable securities, accounts receivables, inventory, banking relationships, and short-term sources of funds. Prerequisite: 320.

475-3 Forecasting and Capital Budgeting. Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement, and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk, and uncertainty in investment analysis; theory and applications in private and public sectors. Prerequisite: 320.

476-3 Problems in Labor Law. Social, economic, and legal evaluations of recent labor problems, court decisions, and legislation. Concern is on long-run legislative impact on manpower planning, dispute settlement, and utilization of employment resources. Elective Pass/Fail.

480-3 International Financial Management. Financial behavior of multinational firms. Emphasis on the modification of conventional financial models to incorporate uniquely foreign variables. Prerequisite: 320.

Fire Science Management

(SEE ADVANCED TECHNICAL STUDIES)

Food and Nutrition (Major, Courses)

The food and nutrition program is a part of the Department of Animal Industries.

Students will be required to take field trips in those courses so designated with the expenses pro-rated for each student. Appropriate uniforms will be required of all students enrolling in those courses that involve preparation of food.

Bachelor of Science Degree, School of Agriculture

FOOD AND NUTRITION MAJOR — DIETETICS SPECIALIZAION

These courses give a strong scientific education to those interested in becoming dietitians in hospitals, college dormitories, industrial plants, health clinics, laboratories, or public health and welfare organizations. They meet the academic requirements of the American Dietetics Association. Eligibility to write the registration examination to become a registered dietitian (R.D) requires completion of academic and experiential requirements.

General Education Requirements	45[1]
Requirement for Major in Food and Nutrition with Specialization in Dietetics	75
GE-A 115, Physiology 210	(7) + 1
GE-B 104 or 108, 202, 211	(9)
GE-D 107	(3)
GE-D 118 or 119	(2)
Electronic Data Processing 107	3
Curriculum, Instruction and Media 237	3
Vocational Education Studies 321 or Psychology 309	2-3
Microbiology 301	4
Food and Nutrition 100, 256, 320, 335, 360a, 361, 363, 470, 471	27
One of the options listed below	34-35
Total	120

General Dietetics Option	
Administrative Sciences 301 or 304	3
Chemistry 140a, b or 222a, b, 340, 450	(4) + 12
Two courses selected from Food and Nutrition 356, 420, 472, 480, 490	6
Electives	13-14
Total	34-35

Clinical Dietetic Option	
Administrative Sciences 301 or 304	3
Chemistry 222a, b, 340, 450	(4) + 12
Food and Nutrition 472	3
Two courses selected from Food and Nutrition 356, 420, 480, 490	6
Physiology 300 or 301	3-4
Electives	6-7
Total	34-35

Management Dietetics Option	
Administrative Sciences 304, 385	6
Chemistry 140a, b or 222a, b, 340, 450	(4) + 12
Food and Nutrition 360b	3
Economics 310	3
Accounting 210 or 220, 230	3-6
Electives	4-7
Total	34-35

[1]The numbers in parentheses are counted as part of the 45-hour General Education requirements.

Community Dietetics Option
- Administrative Sciences 301 or 304 ... 3
- Chemistry 140a, b or 222a, b, 340, 450 ... (4) + 12
- Food and Nutrition 480 ... 3
- Two courses selected from Food and Nutrition 356, 420, 472, 490 ... 6
- Electives ... 10-11

Total ... 34-35

FOOD AND NUTRITION MAJOR — FOOD AND LODGING SYSTEMS MANAGEMENT SPECIALIZATION

These courses prepare students for positions as food systems managers for restaurants, hotels, school food service, public and private lodging facilities, airlines, industrial feeding, resorts, institutions, hospitals, and clubs. They meet the requirements as set forth by industry, the Council of Hotel, Restaurant, and Institutional Education, and the National Restaurant Association. Through this program in the hospitality field, transfer students from community colleges also will be able to complete their baccalaureate degrees.

General Education Requirements ... 45

Requirements for Major in Food and Nutrition with Specialization in Food and Lodging Systems Management ... 60
- GE-A 115 ... (3)
- GE-B 202 ... (3)
- Accounting 220, 230 ... 6
- Administrative Sciences 304, 385 ... 6
- Animal Industries 210 ... 3
- Chemistry 140a ... (4)
- Finance 271 ... 3
- Food and Nutrition 100, 156, 256, 335, 360a,b, 361, 362, 363, 371, 372, 373 ... 32
- Marketing 304 ... 3
- Microbiology 301 ... 4
- Psychology 320 ... 3

Electives ... 15
- Recommended electives: GE-E 236; Chemistry 140b; Curriculum, Instruction and Media 227, 237; Electronic Data Processing 107; Food and Nutrition 320, 420, 421, 470; Microbiology 421

Total ... 120

FOOD AND NUTRITION MAJOR — FOOD AND NUTRITION SCIENCE SPECIALIZATION

These courses give a strong scientific education to those interested in preparing for graduate study in food, nutrition, or related discipline; for research in university, industrial, or governmental laboratories; or for educational and promotional work in industry or public health organizations.

General Education Requirements ... 45

Requirements for Major in Food and Nutrition with Specialization in Food and Nutrition Science ... 55
- GE-A 115 ... (3)
- GE-B 202 ... (3)
- Chemistry 222a,b, 340, 341, 450 ... (4) + 14
- Food and Nutrition 100, 156, 256, 320, 356, 420, 421 ... 20
- Mathematics 108 and 109 ... (3) + 3
- Microbiology 301, 421, 422 ... 9

Physiology 411a and a physiology course approved by the department	5
Psychology 211	4
Electives	20
Recommended electives: Chemistry 451a,b; Curriculum, Instruction and Media 227, 237; Food and Nutrition 490; Health Education 490; Physiology 300, 410a,b, 420.	
Total	120

Courses

See also Animal Industries for additional 400 and 500-level courses.

100-3 Fundamentals of Nutrition. Emphasis on basic principles of food and nutrition in relation to personal health. Elective Pass/Fail.

156-3 Fundamentals of Foods. An introduction to the basic principles and techniques of food preparation. A charge of $15 will be made for laboratory.

247-3 (1, 1, 1) The School Lunch Program. (a) Food purchasing; (b) quantity food production; and (c) nutrition practices in the school lunchroom. Elective Pass/Fail.

256-5 Science of Food. Application of scientific principles including preparation, chemistry, functions, and interrelationships in ingredients and their effects on physical, chemical, and sensory characteristics of foods. Three lecture and two three-hour laboratories per week. A charge of $10 will be made for laboratory. Prerequisite: Chemistry 140a or 222a.

320-3 Nutrition. Principles of nutrition in relation to intermediary metabolism and the role of vitamins and minerals. Prerequisite: 100, Chemistry 140 or equivalent.

321-2 Food and Nutrition Demonstration. Emphasis on principles of food and nutrition including food standards and demonstration techniques. Field trip. Prerequisite: 256.

335-2 Meal Management. The selection, purchase, preparation, and service of food with emphasis on time and money management. A charge of $15 will be made for laboratory. Prerequisite: 256.

356-3 Experimental Foods. Experimental approach to the study of factors influencing the behavior of foods. Individual problems. A charge of $10 will be made for laboratory. Prerequisite: 256.

360-6 (3, 3) Quantity Food Production. (a) Use of power equipment, standardized formulas, and techniques of quantity preparation and service of food to large groups; (b) Practical experiences in area food service units. Prerequisite: 256 or equivalent.

361-3 Food Service Organization and Management. Policies, budgets, supervision, and personnel in feeding large groups.

362-2 Institution Equipment and Layout. Selection and arrangement of various types of institutional food service equipment, including materials, construction operation, cost, use and care.

363-2 Food Purchasing for Institutions. Principles and methods of purchasing food in quantity.

371-2 to 6 Field Experience. Opportunity for supervised learning experiences in the student's major. Prerequisite: consent of instructor or chairperson. Elective Pass/Fail.

372-2 Food Systems in the Lodging Industry. Principles and concepts in developing and operating food production systems in the lodging and tourism industry. Prerequisite: Accounting 210 or equivalent.

373-2 Food and Beverage Controls. Duties and responsibilities of the manager in restaurant, catering, hospitals, and club operations. The use of management methods in budgeting, forecasting, controlling costs, and establishing operational policies in food and beverage cost control. Prerequisite: Accounting 210 or equivalent.

406-2 Food Service Sanitation. Emphasizes the importance of food service sanitation and its application in institutions, restaurants, and the hospitality industry. Upon successful completion of the course, students receive the Illinois State Sanitation Certificate. Prerequisite: consent of instructor.

410-3 Educational Nutrition. The objective of this course is to provide teachers in public and non-public elementary and secondary schools with the necessary background to incorporate food and nutrition into the educational curriculum.

420-3 Recent Developments in Nutrition. Critical study of current scientific literature in nutrition. Prerequisite: 320 or equivalent. Elective Pass/Fail.

421-2 Recent Trends in Food. Critical study of current scientific literature in food. Prerequisite: 320 or equivalent. Elective Pass/Fail.

470-3 Nutrition Therapy I. Physiological and biochemical changes in certain diseases and the appropriate nutrition therapy. Prerequisite: 320, Chemistry 140b or 352, and Physiology 210.

471-3 Nutrition Therapy II. In depth study of the application of nutrition to the manage-

ment of disease states with emphasis on current treatment and complex metabolic abnormalities. Prerequisite: 470.
472-1 to 6 Applied Nutrition Therapy. Application of nutrition principles to the management of patients with altered physiological and biochemical states. Off-campus experience may be required. Prerequisite: 471 or concurrent enrollment in 471 and consent of instructor.
480-3 Community Nutrition. Offers a study of the objectives, implementation strategies, and evaluation methods of nutrition programs in communities' health programs. Integration of nutrition into the health care delivery system at local, state, and federal levels is included.
490-3 Nutrition and Growth. The study of human nutrition during each phase of the life cycle, prenatal through geriatric. Students elect at least two phases for in-depth study. A general review of basic nutrition is included. Prerequisite: consent of instructor and department chairperson. Elective Pass/Fail.
520-2 Advanced Nutrition.
580-1 to 18 (1 to 12 per semester) Nutrition Practicum in the Community.

Foreign Languages and Literatures (Department, Majors, Courses)

Majors and minors are offered in classics (minor: classical civilization), French, German, Russian, and Spanish. Minors are also offered in Chinese, classical civilization, classical Greek, East Asian civilizations, Japanese, and Latin. A student majoring in a foreign language who has taken four years of that language in high school is expected to begin with 300-level courses and to take more upper level courses. Transfer students planning to major in a foreign language must complete a minimum of 12 semester hours of courses in that language at Southern Illinois University at Carbondale. No courses completed with a grade below *C* will be counted toward fulfillment of the requirements for a major. For modern foreign languages, both oral and written language competency must be demonstrated in separate examinations. Students should plan to take these exams no later than two semesters prior to graduation so there is time to make up possible deficiencies before graduation. For students preparing to teach in the public schools, the oral and written competency examinations must be passed before student teaching is begun. Every foreign language major must have a departmental advance registration form, signed by the appropriate adviser in the department, before proceeding to college advisement and registration.

Bachelor of Arts Degree, College of Liberal Arts

(WITHOUT SECONDARY SCHOOL TEACHING CERTIFICATE)

General Education Requirements 45
Supplementary College Requirements (See Page 75) ..... (4) + 8-14
Though not required, a minor of at least 15 hours is recommended. This may be in another foreign language or in any other department within the College of Liberal Arts, but must be approved by the student's departmental adviser; a minor outside the college must be approved by the dean of the college as well.
See the Spanish description for a major program which combines a Spanish major with a minor in secretarial and office specialties.
Requirements for Major in Foreign Language ..... 36[1]
Except for classics, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level.
Electives 25-31
Total 120

[1]See individual language listings for specific requirements.

Bachelor of Arts Degree, College of Liberal Arts

(WITH SECONDARY SCHOOL TEACHING CERTIFICATION)

General Education Requirements 45
Supplementary College Requirements (See page 75.) ..... (4) + 8-14
Though not required, a minor of at least 15 hours is recommended. This may be in another foreign language or in any other department within the College of Liberal Arts, but must be approved by the student's departmental adviser; a minor outside the college must be approved by the dean of the college as well.
Requirements for Major in Foreign Language ..... 36[1]
Except for classics, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level. Foreign Languages 436 will be one of those courses required on the 400-level for majors in French, German, Russian, and Spanish.
Professional Education Requirements 25
See Teacher Education Program, page 66.
Electives 0-6
Total 120

[1]See individual language listings for specific requirements.

Bachelor of Science Degree, College of Education

For College of Education students majoring in a foreign language, the scheduling of those classes which apply to the major must be done with the appropriate adviser from the Department of Foreign Languages and Literatures.

General Education Requirements ..... 45[2]
Requirements for Major in Foreign Language ..... 36[1]
Except for classics, 100-level courses will not count toward the major and at least 12 hours must be in courses on the 400-level. Foreign Languages 436 will be one of those courses required on the 400-level for majors in French, German, Russian, and Spanish.
Professional Education Requirements 25
See Teacher Education Program, page 66.
Electives 14
Total 120

[1]See individual language listings for specific requirements.
[2]See catalog section titled Curriculum, Instruction, and Media for specific certification requirements.

Placement. The student who has completed only one year of foreign language in high school normally begins with the first semester course. The student who has successfully completed two years of study in high school of any language currently taught in the department may begin with the second year level without having to take the placement proficiency examination. Those students who have successfully completed three or more years of high school language should consult the departmental adviser for that language.

Minor

A minor in a foreign language is constituted by 18 hours in courses above the first-year level. See individual language listings for specific requirements. State certification requirements, in terms of total semester hours of subject matter courses, may be met in part by counting first-year foreign language courses or by doing additional advanced work.

A minor in classical civilization or East Asian civilizations is constituted by 15 hours of courses to be selected in consultation with the appropriate sectional adviser.

Secondary Concentration for Majors in the College of Business and Administration

The Department of Foreign Languages and Literatures participates with the Col-

lege of Business and Administration's major program in business and administration by offering a secondary concentration of 20-23 hours for those students who wish to formulate an academic program leading to a career specialization which combines business and a foreign language.

The secondary concentration varies according to the language chosen, but does not normally exceed 23 hours and involves course work from the 100 through the 400 levels. For specific course requirements in the respective languages, interested students should contact advisers in the Department of Foreign Languages and Literatures.

GENERAL FOREIGN LANGUAGE COURSES

Courses

199-3 to 9 (3 per topic) Self Instructional Language. A passive skills (listening and reading) self-instructional program in (a) Italian, (b) Korean, and (c) Portuguese which are not normally offered by the department. Unsupervised language study using language laboratory facilities and designated text materials. Credit granted upon successful completion of proficiency examination. Prerequisite: consent of department chairperson. Mandatory Pass/Fail.

300-3 to 6 (3, 3,) Masterpieces of World Literature. Readings from and discussions of both Western and Eastern literatures, taken from ancient to modern times. Occasional guest lectures by faculty of the department, who speak on their areas of special interest. All readings and lectures in English. Elective Pass/Fail.

436-3 Methods in Teaching Foreign Languages. Survey of general principles of second-language teaching, based upon insights of modern linguistics and learning-psychology. Followed by intensive practical work in classroom and language laboratory with teachers experienced in the student's specific language field. Required of prospective teachers of foreign languages in secondary schools. Prerequisite: concurrent or prior enrollment in 300-level course in French, German, Latin, Russian, or Spanish. Elective Pass/Fail.

475A-12 to 34 Full Year Abroad in Austria. Two semesters at the Padagogische Akademie at Baden and at various institutions of higher learning in Vienna. All courses are taught in German. Students may obtain 30 to 34 semester hours of credit in German language, literature and civilization and with prior approval in elective areas of study including music, art, architecture, history, anthropology, political science, physical education, and sociology. Not for graduate credit. Prerequisite: 5 semesters of college German or equivalent with 3.0 grade point average.

506-1 to 4 Research Problems — French.
507-1 to 4 Research Problems — German.
508-1 to 4 Research Problems — Russian.
509-1 to 4 Research Problems — Spanish.
535-2 Critical Theory.
566-2 Bibliography and Research Techniques — French.
567-2 Bibliography and Research Techniques — German.
568-2 Bibliography and Research Techniques — Russian.
569-3 Bibliography and Research Techniques — Spanish.

CHINESE (Minor, Courses)

Minor

Chinese courses above 100 level	18
200 level: 201a,b	10
300 level	8

Courses

120-8 (4, 4) Elementary Chinese. Standard (Mandarin) Chinese. The basic skills of listening, speaking, reading, and writing. No previous knowledge of Chinese required. Must be taken in a, b sequence. Elective Pass/Fail.

201-10 (5, 5) Intermediate Chinese. Standard (Mandarin) Chinese. Development of listening, speaking, reading, and writing on the intermediate level. Must be taken in a, b sequence. Prerequisite: 120b or equivalent. Elective Pass/Fail.

305-2 to 4 (2, 2) Individualized Language Study. Designed to improve language skills beyond the intermediate level. Tailored to the particular needs of students. Prerequisite: 201b or equivalent. Elective Pass/Fail.

306-6 (3, 3) Readings in Chinese. Designed to give students with some Chinese background proficiency in reading modern Chinese. Special attention to cultural readings. Must be taken in a, b sequence. Prerequisite: 201b or equivalent. Elective Pass/Fail.
410-3 The Linguistic Structure of Chinese. (Same as Linguistics 411.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or introduction to linguistics. Elective Pass/Fail.

CLASSICS (Major, Minors [Greek, Latin, Classical Civilization], Courses)

Bachelor of Arts Degree, College of Liberal Arts

Classics courses and courses from participating departments 36
Original Greek and Latin courses, two years of one language or one year of each 12-16
Electives: additional courses in Greek, Latin, or classical civilization (225, 270, 271, 310, 332, 405, 406, 441, 496)[1]; Classics 396; GE-C 230, 330; courses from participating departments (limited to 12 hours): Anthropology 304; Art 307; History 310, 313; Philosophy 304, 470, 471; Political Science 404 20-24

Bachelor of Science Degree, College of Education, or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

Courses in Classics 36
Language Courses in Latin and Greek 30
- In Latin, 133, 202, 320, and 5 hours of 300-level Latin 22
- In the original Greek, 8 hours from among: 130, 201, or any 300-level Greek courses 8
- GE-C 230 3
- Foreign Languages 436 3

Also recommended are 332 and GE-C 330.

Minor in Greek

Greek courses above 100-level 18

Minor in Latin

Latin courses above 100-level (388 and 488 may not be counted); 320 recommended 18

Minor in Classical Civilization

Courses to be selected in consultation with adviser from Greek, Latin, or classical civilization (225, 270, 271, 310, 332, 405, 406, 441, 496)[1]; courses also recommended: GE-C 230, 330 and either Classics 100 or 101 ..... 15[2]

[1]Classical civilization includes all classics courses above the 100-level for which no knowledge of Greek or Latin is required.
[2]18 hours are required for state certification.

Courses

100-2 Greek and Latin in English. Vocabulary building through roots, prefixes, and suffixes. Recommended for students interested in the origin of English words. No knowledge of Greek or Latin is required. Elective Pass/Fail.
101-3 Scientific Terminology: Greek and Latin Derivatives. Analysis of common vocabulary and of basic scientific terminology into its component prefixes, roots, and suffixes. The course concentrates on methods for recognizing and understanding polysyllabic technical terms. No prerequisite required. No knowledge of Greek or Latin is required.

130-8 (4, 4) Elementary Classical Greek. The object of this course is to give students a firm foundation in the grammar, vocabulary, and syntax of Ancient Greek in order to enable them to progress to the reading of the Greek classics and New Testament. Must be taken in a,b sequence. No previous knowledge of Greek required. Elective Pass/Fail.
133-8 (4, 4) Elementary Latin. The object of this course is to give students a firm foundation in the grammar, vocabulary, and syntax of Latin in order to enable them to progress to the reading of the Latin classics. No previous knowledge of Latin required. Must be taken in a,b sequence. Elective Pass/Fail.
201-6 (3, 3) Intermediate Greek. Reading and interpretation of selected works by authors such as Xenophon, Plato, Homer, and the New Testament writers. Must be taken in a,b sequence. Prerequisite: 130 or equivalent. Elective Pass/Fail.
202-6 (3, 3) Intermediate Latin. Reading from authors such as Livy, Caesar, and Cicero. Must be taken in a,b sequence. Prerequisite: 133 or two years of high school Latin or equivalent. Elective Pass/Fail.
225-3 Athletics, Sports, and Games in the Ancient World. The Olympics and other great games of ancient Greece; games and sporting events of ancient Rome; differences between ancient and modern attitudes about "sport" and sports. No knowledge of Greek or Latin is required. Elective Pass/Fail.
270-3 Greek Civilization. An introduction to the life and culture of ancient Greece. Greek contributions to western civilization in literature, art, history, and philosophy. No knowledge of Greek or Latin is required. Elective Pass/Fail.
271-3 Roman Civilization. An introduction to the life and culture of ancient Rome. Rome's function in assimilating, transforming and passing on the Greek literary and intellectual achievements. Rome's own contributions in the political, social, and cultural spheres. No knowledge of Greek or Latin is required. Elective Pass/Fail.
310-3 Ancient Art and Archaeology. Survey of the physical remains of ancient civilizations of the Aegean and Mediterranean areas. Special attention to the artistic and architectural achievements of the Greeks and Romans. Occasionally offered overseas. No knowledge of Greek or Latin is required. Elective Pass/Fail.
320-3 Latin Composition. The object of this course is to understand and appreciate the structure and style of Latin through composition. Prerequisite: 202 or equivalent. Elective Pass/Fail.
332-3 Classical Drama. Reading several tragedies and comedies of the Greeks and Romans both with a view to enjoying them as timeless works of art and with a view to understanding how they grew out of the societies of classical Greece and Rome. No knowledge of Greek or Latin is required. Elective Pass/Fail.
380-2 to 4 Greek Prose Authors in Greek. Reading of Greek prose. Selections from the historians (Herodotus, Thucydides), orators (Lysias, Demosthenes, et al.) philosophers (Plato, Aristotle), or epistles of the New Testament. Prerequisite: 201 or equivalent. Elective Pass/Fail.
381-3 Homeric Epic in Greek. Reading and interpretation of selections from the *Iliad* or the *Odyssey.* Homeric grammar and metrics, epic diction, the conventions of oral poetry. Prerequisite: 201 or equivalent. Elective Pass/Fail.
382-3 Greek Drama in Greek. Reading and interpretation of selections from the works of the classical Greek dramatists: Aeschylus, Sophocles, Euripides, and Aristophanes. Stage conventions of the Attic theater. Prerequisite: 201 or equivalent. Elective Pass/Fail.
383-3 Early Greek Lyric in Greek. Reading and interpretation of poets of the Archaic Age such as Alcaeus, Sappho, and Pindar. Socio-political background, dialects, meters. Prerequisite: 201 or equivalent. Elective Pass/Fail.
384-3 Roman Philosophy in Latin. Selections from Cicero, Lucretius, and Seneca the Younger. Recommended for students with double majors in philosophy and classics. Prerequisite: 202 or equivalent. Elective Pass/Fail.
385-3 Medieval Latin. Selected readings from Latin authors of the Middle Ages. Prerequisite: 202 or equivalent. Elective Pass/Fail.
386-3 Roman Historians in Latin. Selections from Caesar, Sallust, Livy, Tacitus, and Suetonius. Recommended for students with double majors in history and classics. Prerequisite: 202 or equivalent. Elective Pass/Fail.
387-3 Vergil in Latin. Selections from Vergil's major works, the *Aeneid, Eclogues,* etc. Prerequisite: 202 or equivalent. Elective Pass/Fail.
388-3 Latin as a Research Tool. Intensive study of Latin as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.
389-3 Myth, Fable, and Story in Latin. Selections from works such as the *Metamorphoses* of Ovid, the *Fables* of Phaedrus, and *Satyricon* of Petronius. Prerequisite: 202 or equivalent. Elective Pass/Fail.
390-3 Roman Comedy in Latin. Reading and interpretation of selections from play(s) by Plautus and Terence. Prerequisite: 202 or equivalent. Elective Pass/Fail.
391-3 Lyric and Satire in Latin. Reading and interpretation of works by poets such as

Catullus, Horace, Juvenal, and Persius. Study of either the lyric or satiric genre. Prerequisite: 202 or equivalent. Elective Pass/Fail.

396-3 Honors in Classics. Readings of classical literature, in Greek or Latin or English translation, for junior or senior majors. The course requires preparation of an honors paper or comparable project, and satisfies one of the requirements for graduation with honors in classics. Prerequisite: 3.75 grade average in classics courses and consent of classics faculty.

405-2 Greek Literature in Translation. (Same as Women's Studies 463.) Reading and analysis of selected classical Greek author(s), genre(s), theme(s), such as the role of woman, the social life of the ancient Greeks, etc. Students taking the course for graduate credit will do a critical study of one aspect. No knowledge of Greek or Latin is required. Elective Pass/Fail.

406-2 Latin Literature in Translation. Reading and analysis of selected Roman author(s), genre(s), theme(s). Students taking the course for graduate credit will do a critical study of one aspect. No knowledge of Greek or Latin is required. Elective Pass/Fail.

415-1 to 9 (1 to 3 per topic) Readings from Greek Authors in Greek. Reading and interpretation of works of Greek literature at an advanced level. Prerequisite: two semesters of 300-level Greek or consent of instructor.

416-1 to 9 (1 to 3 per topic) Readings from Latin Authors in Latin. Reading and interpretation of works of Latin literature at an advanced level. Prerequisite: two semesters of 300-level Latin or consent of instructor.

441-3 Themes in Greek Tragedies and the New Testament. (Same as Religious Studies 441.) Greek tragedies and New Testament passages from the Synoptic Gospels and the Letters of Paul showing similarities and differences in their treatment of such themes as freedom, law, love, and justice. Not for graduate credit. No knowledge of Greek or Latin is required. Prerequisite: 270, 332 or 405 or GE-C 330, or 231 and GE-C 217 or consent of instructor. Elective Pass/Fail.

488-3 Advanced Latin as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor. With consent of student's own department, and with a grade of *B* or *A*, satisfies graduate program requirements for foreign languages as research tool. Prerequisite: 388 or one year of Latin or equivalent.

496-2 to 8 (2 to 4, 2 to 4) Independent Study in Classics Program. (Same as Anthropology 376, History 396, Philosophy 496, Religious Studies 496.) Normally taken in course of junior and senior years to a total of at least four hours under a professor participating in classics program (anthropology, classics, history, philosophy, or religious studies). At end of advanced level work, student will submit a research paper. Not for graduate credit. No knowledge of Greek or Latin is required. Prerequisite: consent of instructor and classics section head. Elective Pass/Fail.

EAST ASIA (Courses)

300-3 Masterpieces of Oriental Literatures. Lectures and collateral readings of representative oriental literary works in English translation with special attention to literary forms and thought from ancient to contemporary China and Japan. No knowledge of an oriental language required. Elective Pass/Fail.

370-1 to 6 (1 to 3 per topic) Topics in East Asian Cultural Traditions. Selected topics in East Asian cultural traditions. May be repeated to a total of six hours with the consent of the department. No prerequisite. Taught in English. Elective Pass/Fail.

EAST ASIAN CIVILIZATIONS (Minor)

Minor

Courses in Chinese and Japanese selected in consultation with adviser . . . . . 15[1]

[1]18 hours is required for State certification.

FRENCH (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

French courses above 100 level 36
200 level: 201a,b (220 recommended; does not usually count toward major or minor) 8

300 level: 320, plus any combination of 300 level courses 14
400 level: any combination of 400 level courses 14
(At least one literature course must be taken at either the 300 or the 400 level.)

Bachelor of Science Degree, College of Education, or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

French courses above 100 level 36
200 level: 201 a,b (220 recommended; does not usually count toward major or minor) . . . . . 8[1]
300 level: 320, plus any combination of 300 level courses 14
400 level: Foreign Languages 436, plus any combination of 400 level courses 14
(At least one literature course must be taken at either the 300 or the 400 level.)

Minor

French courses above 100 level 18
200 level: 201a,b . . . . . 8[1]
300 level: 320, plus any combination of 300 level courses 10

[1]With the approval of the French section, one semester of 220 may be counted toward the major or minor, in which case the 400-level requirements would be reduced to 12 hours for the major and the 300-level course requirements would be reduced to 8 hours for a minor.

Courses

123-8 (4, 4) Elementary French. The basic skills of listening, speaking, reading, and writing. No previous knowledge of French is required. Must be taken in a,b sequence. Elective Pass/Fail.
124-2 Elementary French Conversation. Conversation skills for beginners. Special emphasis on tourist vocabulary. Prerequisite: concurrent enrollment in 123B or consent of instructor. Elective Pass/Fail.
190-5 Review of Elementary French. A review course on first year level for students who have had two or more years of high school French or equivalent. Elective Pass/Fail.
201-8 (4, 4) Intermediate French. Grammar review, translation, oral practice, written composition, and development of reading skills. Reading of material on contemporary France and selections from French literature. Prerequisite: 123, 190, or two years of high school French, or equivalent. Elective Pass/Fail.
220-2 to 4 (2, 2) Intermediate French Conversation. Development of oral skills on the intermediate level. Not usually accepted toward major requirement. Prerequisite: 123b or 190 or equivalent. Elective Pass/Fail.
300-3 Image of Women in French Literature. (Same as Womens Studies 352.) Female characters as they are represented in French literature through the centuries; the development of a psychological and sociological point of view of women through the examination of women's roles in French literature. Conducted in English. Counted toward major only with consent of adviser. Elective Pass/Fail.
310-4 Development of French Literature from the Middle Ages Through the Eighteenth Century. Major literary movements and authors as exemplified in representative works. Elective Pass/Fail.
311-3 Modern French Literature. The themes, structures, and language of some major works of poets, novelists, and playwrights from the early Romantics through the Existentialists and Robbe-Grillet. Elective Pass/Fail.
320-4 Advanced Language Skills. A review of grammar and syntax with extensive practice in translation and composition. Reading of French texts as basis for discussion and papers. Prerequisite: 201b or equivalent. Elective Pass/Fail.
321-3 Advanced Conversation. Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms emphasized through classroom and language laboratory work. Highly recommended for those students with a major in French. Prerequisite: 201b. Elective Pass/Fail.
330-3 Introduction to Literary Analysis. Examination of the basic elements of literary expression; practice of rudimentary *explications de textes.* Selections for study are taken from important works of French literature and analyses are directed toward developing the students' artistic sensibilities as well as improving their analytical skills. Elective Pass/Fail.

350-2 French Phonetics. Introduction to French phonemics and phonetics involving production of French sounds and English interference. Emphasis on corrective pronunciation. Elective Pass/Fail.
370-3 Modern France. The main philosophical, political, and artistic trends within the nineteenth and twentieth centuries which have contributed to the formation of present day France. Prerequisite: 320 or 321. Elective Pass/Fail.
375-1 to 6 Travel-Study in France. Travel-Study project, planned under supervision of French faculty and carried out in France. Prerequisite: 201b, and consent of faculty. Elective Pass/Fail.
388-3 French as a Research Tool. Intensive study of French as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.
390-1 to 6 Independent Study in French. Individual exploration of some question, author, or theme of significance within the field of French literature, language, or culture. Prerequisite: consent of instructor.
410-3 Individualized Language Study. Treatment of problems concerning grammar, idioms, vocabulary, and other language skills in units tailored to the particular needs of the individual advanced level students enrolled in the course. Exercises in writing, understanding, and speaking will be offered with emphasis placed on the active use of the language which the student may need in present or future activities or careers. Elective Pass/Fail.
411-3 Contrastive Analysis: French and English. Study of the phonology, morphology, and syntax of modern spoken and written French, stressing interference areas for English speakers in learning French. Prerequisite: 320 and 321 or equivalent. Elective Pass/Fail.
412-4 History of the French Language. A survey of the phonological and morphological changes from Latin through Vulgar Latin and Old French to Modern French; study of an original Old French text, such as the *Chanson de Roland* or a romance of Chretien de Troyes. Knowledge of Latin not required. Elective Pass/Fail.
414-3 Translation Techniques. Practice in oral translation — simultaneous and subsequent; written translation practice, from and into French, of materials from sources varying from technical, commercial, political, to general interest. Advanced grammar and syntax review as they relate to translation, with practice through exercises and translation. Prerequisite: 320 or equivalent.
415-3 Literary Stylistics. A study of the aesthetics and theory of French Literary expression. Disciplined stylistic analyses of excerpts from representative works of great French authors. Appreciation of distinctive qualities of each writer's genius. Consideration is given to various stylistic methods. Elective Pass/Fail.
419-3 Romance Philology. (Same as Spanish 419.) Historical and comparative study of the major Romance languages: their phonology, morphology, and syntax. Elective Pass/Fail.
420-3 Medieval and Renaissance Literature. Study of the origins of French literature emphasizing the *Chanson de Roland, Tristan,* other courtly romances, and the lyric poetry of Villon, culminating with an examination of the development of the humanistic ideas and ideals of the French Renaissance. Elective Pass/Fail.
430-4 Baroque and Classicism. An in-depth examination of artistic and social writings of baroque and classical literary figures such as Corneille, Racine, Moliere, La Fontaine, Descartes, Pascal, Mme de LaFayette, La Bruyere, and La Rochefoucauld. Discussion, reports, papers. Elective Pass/Fail.
435-3 Business French. An overview of the French economy through readings in French newspapers and magazines. Grammar review and study of business vocabulary and practices through translation, oral presentations, and commercial correspondence. Prerequisite: 320 or equivalent.
438-3 Business French II. A continuation of 435 but may be taken independently. Translations of business documents, oral and written presentations of news items on business in France, and commercial correspondence. Detailed study of transportation of goods, conditions, and documents of sales, payments, imports and exports, banking, French companies, insurance, and taxes. Prerequisite: 320 or equivalent.
440-3 Literature of the Enlightenment. Study and discussion of the novel, theater, and philosophic writing of 18th century France as literature and as expressions of the Enlightenment. Major attention given to Montesquieu, Voltaire, Diderot, and Rousseau. Elective Pass/Fail.
450-4 Literary Movements of the 19th Century. Romanticism, Realism, and Naturalism in the novel and theater followed by an examination of the reaction to these movements and of the influence of symbolism. Elective Pass/Fail.
460-4 Studies in Literature of the 20th Century. Examination of the major themes, forms, techniques, and style of novelists from Gide and Proust to Robbe-Grillet and dramatists from Giraudoux to Ionesco and Beckett. Elective Pass/Fail.
470-3 Backgrounds of French Civilization. A study of the events, figures, and movements in France which have influenced its culture and civilization. Elective Pass/Fail.

475-3 to 6 Travel-Study in France. Travel-study project, planned under supervision of French faculty and carried out in France. Amount of credit depending on scope of study. Prerequisite: 320 or equivalent. Elective Pass/Fail.
476-3 to 6 (3, 3) French Civilization Outside of France. Encompasses a number of individual courses, each of which focuses on one of the many areas of the world in which France has played a significant role. Manifestations of French culture and civilization, past and present, are studied and evaluated within the framework of an evolving local and global historic context.
488-3 Advanced French as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign languages as research tool. Prerequisite: 388 or one year of French, or equivalent.
490-1 to 6 Advanced Independent Study in French. Individual exploration of some question, author, or theme of significance within the field of French literature, language or culture. Prerequisite: 320, 321 and consent of instructor.
501-2 to 6 Studies on a Selected Topic or Author.
510-3 Masterpieces of French Literature.
520-1 to 3 Literature of the Middle Ages and Renaissance.
525-3 Advanced Language Skills.
536-1 Teaching French at the College Level.
539-1 to 3 Literature of the 17th Century.
540-1 to 3 Literature of the 18th Century.
550-1 to 3 Literature of the 19th Century.
560-1 to 3 Literature of the 20th Century.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

GERMAN (Major, Minor, Courses)

At least one course in the history of Germany or Central Europe is recommended for all students majoring in German. Credit must be earned in at least one regularly scheduled 400-level course taken on the Southern Illinois University at Carbondale campus.

Bachelor of Arts Degree, College of Liberal Arts

Courses above 100 level 36
- 200 level: 201a,b (201c recommended) 8-11
- 300 level: 320-6, plus any combination of 300-level courses 9-12
- 400 level: Any combination of 400 level courses 12
- German electives (300 or 400 level) 4
  - (At least one literature course must be taken at either the 300 or the 400 level.)

Bachelor of Science Degree, College of Education or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

Courses above 100 level 36
- 200 level: 201a,b (201c recommended) 8-11
- 300 level: 320-6, plus any combination of 300-level courses 9-12
- 400 level: Foreign Languages 436, plus any combination of 400 level courses 12
- German electives (300 or 400 level) 4
  - (At least one literature course must be taken at either the 300 or the 400 level.)

Minor

Courses above 100 level 18
- 200 level: 201a,b (201c recommended) 8-11
- 300 level: 320a,b 6
- German electives (300 or 400 level including at least one regularly scheduled course) 1-4

Courses

126-8 (4, 4) Elementary German. The course emphasizes German culture as it is expressed in the language. It concentrates on the four language skills of understanding, speaking, reading, and writing. No previous knowledge of German required. Must be taken in a,b sequence. Purchase of a workbook is required. Elective Pass/Fail.

127-2 (1, 1) Elementary German Conversation. Conversation skills for beginners making use of modern media. No previous knowledge of German required. Must be taken in a,b sequence or as companion course to 126a or b or with consent of instructor. Elective Pass/Fail.

201-8 (4, 4) Intermediate German. Intensification of the four basic language skills. Study of the culture and everyday living situations in the German-speaking countries. Must be taken in a,b sequence. Prerequisite: 126b or equivalent. Elective Pass/Fail.

201C-6 (3, 3)German Language Workshop. This intensive (15 days), total-immersion (exclusively in German) program combines formal classwork with informal seminars, group activities (folk singing, skits, play readings, films, talent shows, etc.) and individual assignments (daily compositions, diaries). May be repeated once but only three hours will count toward major or minor. Prerequisite: 201b or consent of instructor.

202-2 (1, 1) Intermediate German Conversation. Designed to improve the student's speaking ability through use of modern media. Must be taken in a,b sequence or as companion course to 201a or b or with consent of instructor. Prerequisite: 126b or equivalent. Elective Pass/Fail.

230-3 Nordic Mythology. An introduction to the study of the mythology and culture of the Germanic, and especially the Scandinavian peoples during the time of the Vikings. Emphasis on the Poetic Edda and Prose Edda; also historical and archaeological material. All readings in translation. Elective Pass/Fail.

300-3 German Literature in Translation. Readings of German authors of particular interest to American students, such as Hesse, Kafka, Brecht, and Mann. May count toward German major only with consent of adviser. Elective Pass/Fail.

320-6 (3, 3) Advanced Composition and Conversation. Devoted to increasing the student's command of German. Intensive practice in oral and written composition. Beginning with rather controlled subject matter and progressing to a wider choice of topics. Conducted primarily in German. To be taken in sequence. Required for majors. Prerequisite: 201b or equivalent. Elective Pass/Fail.

321-2 (1, 1) Small Group Conversation. Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms through active participation in small-group informal conversation. Guests are encouraged to attend. Prerequisite: 201b or equivalent. Mandatory Pass/Fail.

330-3 Introduction to German Literature. Survey of masterpieces of German literature including works from various genres and from the major periods of German literary history. Student projects will include demonstration of various techniques of literary criticism. Course is taught primarily in German. Prerequisite: 201b or equivalent. Elective Pass/Fail.

331-3 Faust, Part I and II. Study of both parts of Goethe's *Faust* as a single poetic drama. Close reading of some passages for qualities of literary form and other passages for statements about the human condition in western civilization. Taught in English, readings in bilingual edition. May count toward German major only with consent of adviser. Elective Pass/Fail.

370-3 Contemporary Germany. Study of life in Germany since World War II including the customs and habits, thoughts and beliefs, as well as the broad complex of traditions basic to everyday life. Readings are in English and include literary and journalistic materials as well as written and filmed documentaries. No prerequisite. May count toward German major only with consent of instructor. Offered alternate years only. Elective Pass/Fail.

380-3 Modern German Prose. Introduction to outstanding German prose literature of the 19th and 20th centuries. Attention to historical and social backgrounds. Extensive readings supplemented by lectures and discussions. Conducted in German. Prerequisite: 201b or equivalent. Elective Pass/Fail.

388-3 German as a Research Tool. Intensive study of German as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with the course instructor.

390-1 to 3 Directed Language Learning Activity. Special projects such as translation practicum, German play production, German newsletter, instructional assistance, special presentations, or internship in a business firm in Germany. May count as the fifth semester required for Foreign Languages 475a. Prerequisite: consent of instructor.
401-3 Early German Literature. Survey of medieval culture and literature. Reading of selections and discussion of major works of the Middle Ages in their esthetic and historical contexts. Conducted in German. Offered in alternate years only. Prerequisite: 330 or 380. Elective Pass/Fail.
412-3 Linguistic Structure of Modern German. The descriptive study of phonology, grammatical structure, and vocabulary of modern German with consideration of its structural differences from English and application to teaching. Appropriate for students with at least two years of German. Conducted in English. Elective Pass/Fail.
413-3 History of the German Language. Development of German from its Indo-European origin to the present in political and cultural context. The main linguistic aspects dealt with are lexical and semantic changes. Appropriate for students with at least two years of German. Conducted in English. Elective Pass/Fail.
416-3 Individualized Language Study. Designed to improve language skills beyond the level of 320. Treatment of problems concerning grammar, idioms, vocabulary, and other language skills tailored to the particular needs of advanced students. Emphasis is placed on the active use of the language which the student may need in present or future activities or careers. Prerequisite: 320b or equivalent. Elective Pass/Fail.
435-3 Business German. An overview of West German business, presented through lectures, readings, and discussions. Course work with textbook and supplementary materials will focus on the major aspects of German business. Exercises will include vocabulary building, listening and reading comprehension, oral and written summarization, role playing in typical situations, mock telephone conversations, and business correspondence. Prerequisite: 320 or consent of instructor.
445-3 Age of Goethe. Intensive and extensive study of the authors, works, and movements of the period spanned by Goethe's life (1749-1832). Lectures, reports. Conducted in German. Prerequisite: 330 or consent of instructor. Elective Pass/Fail.
460-3 East and West of the Wall. Literature of the two Germanies. Course will trace the beginnings and the establishment of the two German literatures after World War II. Conducted in German. Prerequisite: 330 or 380. Elective Pass/Fail.
465-3 German Theater Today. Plays performed in German-speaking countries at the present. The role of the theater in German culture. Conducted in German. Prerequisite: 330 or equivalent. Elective Pass/Fail.
485-2 German Lyric Poetry. Development of German lyric poetry from Klopstock and Burger to the present. Conducted in German. Prerequisite: 330 or equivalent. Elective Pass/Fail.
488-3 Advanced German as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign languages as research tool. Prerequisite: 388 or one year of German or equivalent.
490-1 to 6 (1 to 3, 1 to 3) Independent Study in German. Project-study under supervision of German faculty. Amount of credit depends on scope of study. May be repeated as the topic varies, up to the maximum of six semester hours. Prerequisite: senior or graduate standing and approval of supervising instructor.
493-3 to 9 (3 per topic) Seminars in Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Primarily for undergraduates. Prerequisite: consent of instructor. Elective Pass/Fail.
501-2 to 4 (2, 2) Seminar in Literature, Culture, or Folklore.
502-2 to 4 (2, 2) Seminar in Germanic Linguistics.
510-3 Middle High German.
512-2 Historical Germanic Dialects.
536-1 Teaching German at the College Level.
560-3 German Literature at the Turn of the 20th Century.
561-3 Modern German Novel.
586-3 Das Komische.
590-3 to 9 (3 per topic) Independent Study on Special Topics in Literature and Language.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

GREEK (Minor, Courses)

(SEE CLASSICS)

JAPANESE (Minor, Courses)

Minor

Japanese courses above 100 level 18
- 200 level: 201a,b 10
- 300 level 8

Courses

131-8 (4, 4) Elementary Japanese. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Japanese is required. Must be taken in a,b sequence. Elective Pass/Fail.
201-10 (5, 5) Intermediate Japanese. Development of listening, speaking, reading, and writing skills on the intermediate level, with special attention to cultural readings. Must be taken in a,b sequence. Prerequisite: 131b. Elective Pass/Fail.
305-2 to 4 (2, 2) Individualized Language Study. Designed to improve language skill beyond the intermediate level. Tailored to the particular needs of students. Prerequisite: 201b or equivalent. Elective Pass/Fail.
306-6 (3, 3) Readings in Japanese. Designed to give students with some Japanese background proficiency in reading modern Japanese. Special attention to cultural readings. Must be taken in a, b sequence. Prerequisite: 201b or equivalent. Elective Pass/Fail.
410-3 The Linguistic Structure of Japanese. (Same as Linguistics 412.) Phonology and syntax of the Standard Japanese. Special emphasis on the contrastive analysis between Japanese and English. Typological similarities and lexical borrowings between Chinese and Japanese. Prerequisite: one year of Japanese or introduction to linguistics. Elective Pass/Fail.

LATIN (Minor, Courses)

(SEE CLASSICS)

PORTUGUESE (Courses)

175-5 First-Year Portuguese. First year Portuguese in one semester. The basic skills of listening, speaking, reading, and writing. Not open to native Portuguese speakers without permission of Spanish section. Elective Pass/Fail.

RUSSIAN (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

Russian courses above 100 level 36
- 200 level: 201a,b 8
- 300 level: Any combination of 300 level courses 12
- 400 level: Any combination of 400 level courses including at least one literature course 12
- Russian electives (300 or 400 level) 4

Bachelor of Science Degree, College of Education or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

Russian courses above 100 level 36
- 200 level: 201a,b 8
- 300 level: Any combination of 300 level courses 12
- 400 level: Any combination of 400 level courses including at least one literature course and Foreign Languages 436 12
- Russian electives (300 or 400 level) 4

Minor

Russian courses above 100 level 18
200 level: 201a,b 8
300 level: Any combination of
300 or some 400 level courses 10

Courses

136-8 (4, 4) Elementary Russian. Emphasis on basic skills of listening, speaking, reading, and writing. No previous knowledge of Russian required. Must be taken in a,b sequence. Elective Pass/Fail.
201-8 (4, 4) Intermediate Russian. Continuation of the language structure with practice in oral and written Russian. Must be taken in a,b sequence. Prerequisite: 136 or two years of high school Russian or equivalent. Elective Pass/Fail.
220-4 (2, 2) Intermediate Russian Conversation. Practice of oral skills on the intermediate level. May be taken as companion course to 201a,b or with consent of instructor. Prerequisite: 136b or equivalent. Elective Pass/Fail.
305-4 Advanced Conversation and Composition. Improvement of self-expression, oral and written comprehension, free composition and conversation; readings based on the history of Russia, as well as readings of magazine and newspaper articles. Prerequisite: 201 or equivalent. Elective Pass/Fail.
306-3 Intermediate Readings in Russian. Designed to improve skills in reading selections from Russian prose. Prerequisite: 201 or equivalent. Elective Pass/Fail.
320-3 Advanced Language Skills. A review of fine points of grammar and polishing of student's syntax. Prerequisite: 201 or equivalent. Elective Pass/Fail.
330-4 Introduction to Russian Literature. Reading and analysis of the texts selected from Russian literature.
350-3 Russian Phonetics. Analysis of the sounds of Russian and their manner of production; intonation and stress; levels of speech, oral practice. Prerequisite: 201b. Elective Pass/Fail.
375-3 to 6 Travel Study in USSR. Supervised travel-study program in the USSR. Prerequisite: 201 or equivalent. Elective Pass/Fail.
388-3 Russian as a Research Tool. Intensive study of Russian as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.
411-3 Russian Stylistics. Writing styles in Russian and its application to the development of skill in written expression. Elective Pass/Fail.
415-3 Russian Linguistic Structure. Structural analysis of present-day Russian with special attention to morphology and syntax. Elective Pass/Fail.
430-4 Business Russian. A study of the style of commercial language and its application to the development of skill in business correspondence, such as: inquiries, offers, orders, contracts, agreements, as well as documents concerning transport, insurance, and customs. Prerequisite: 201 or equivalent. Elective Pass/Fail.
465-3 Soviet Russian Literature. Major fiction writers and literary trends since 1917. Lectures, readings, and reports. Elective Pass/Fail.
470-3 Soviet Civilization. Soviet culture and civilization is studied primarily through literary works, journalistic materials, and excerpts from non-literary works as general background reading. Lectures are illustrated with maps, slides, films and art works. Taught in English. Readings are in English and in bilingual edition. No prerequisite: May count toward Russian major with consent of graduate adviser. Elective Pass/Fail.
475-2 to 3 Travel-Study in USSR. Specialized course comprising part of the travel-study program in the Union of Soviet Socialistic Republics. Prerequisite: 201 or equivalent. Elective Pass/Fail.
480-4 Russian Realism. Authors in 19th century Russian literature. Special attention to stylistic devices. Lectures, readings, and individual class reports. Elective Pass/Fail.
485-3 Russian Poetry. A study of literary trends and representative works of Russian poets. Elective Pass/Fail.
488-3 Advanced Russian as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign languages as a research tool. Prerequisite: 388 or one year of Russian or equivalent.
490-1 to 3 Independent Study. Directed independent study in a selected area. Prerequisite: consent of the Russian section head. Elective Pass/Fail.
501-2 Seminar on a Selected Russian Author.

502-2 Seminar in Contemporary Russian Literature.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

SPANISH (Major, Minor, Courses)

Bachelor of Arts Degree, College of Liberal Arts

Spanish courses above 100 level 36
- 200 level: 201a,b or 275 5-6
- 300 and 400 levels: 306, 320, and 415, plus any combination of 300 or 400 level courses which includes a literature course and at least nine additional 400 level hours 26-27
- Spanish electives (only one semester of 220 may be counted toward the major) 4

Bachelor of Arts Degree, College of Liberal Arts (with a minor in secretarial and office specialities, for bilingual secretaries)

Spanish courses above 100 level 36
- 200 level: 201a,b or 275 5-6
- 300 and 400 levels: 306, 320, and 412, plus any combination of 300 or 400 level courses which includes at least nine additional 400 level hours 24-25
- Spanish electives (only one semester of 220 may be counted toward the major 6

See secretarial and office specialties for a description of minor requirements.

Bachelor of Science Degree, College of Education or Bachelor of Arts Degree, College of Liberal Arts (with secondary school certification)

Spanish courses above 100 level 36
- 200 level: 201a,b or 275 5-6
- 300 and 400 levels: 306, 320, 415, Foreign Languages 436, plus any combination of 300 or 400 level courses which includes a literature course and at least six additional 400 level hours 26-27
- Spanish electives (only one semester of 220 may be counted toward the major) 4

Minor

Spanish courses above 100 level 18
- 200 level: 201a,b or 275 5-6
- 300 level: 306 and 320 7
- Spanish electives (only one semester of 220 may be counted toward the minor 5-6

Courses

140-8 (4, 4) First-Year Spanish. The basic skills of listening, speaking, reading, and writing. No previous knowledge of Spanish required. Must be taken in a,b sequence. Not open to native speakers of Spanish without permission of the Spanish section. Elective Pass/Fail.
141-2 Elementary Spanish Conversation. Conversation skills for beginners. Emphasis on everyday situations. Cannot be taken to satisfy language requirement. Not open to native Spanish speakers. Is not a companion course for 140a,b or 175. Prerequisite: 140a or equivalent. Elective Pass/Fail.
157-8 (4, 4) Individualized Instruction. Teacher-assisted, mastery-based, self-paced instruction in Spanish. Basic skills of listening, speaking, reading, and writing are learned. Parallel in scope and credit to regular basic skills courses. Not open to native speakers. Elective Pass/Fail.
175-5 Business Spanish: First Year. First-year Spanish covered in one semester. The basic skills of listening, speaking, reading, and writing using business Spanish vocabulary. Not open to native speakers of Spanish without permission of the Spanish section. Prereq-

uisite: one year of high school Spanish or equivalent or special permission of instructor. Elective Pass/Fail.

201-6 (3, 3) Second-Year Spanish. Continuation of grammar and composition. Exercises in language laboratory. Selected readings, with special attention to the role of Hispanic culture in world civilization. Must be taken in a,b sequence. Not open to native speakers of Spanish without permission of the Spanish section. Prerequisite: 140b or 175 or two years of high-school Spanish or equivalent. Elective Pass/Fail.

220-4 (2, 2) Spanish Conversation. Practice in spoken Spanish. Prepared and impromptu group discussions on general topics and everyday situations. Frequent short talks by students. Not open to native speakers of Spanish without permission of the Spanish section. Prerequisite: 140b or 175 or two years of high-school Spanish. Elective Pass/Fail.

273-2 Study in Spain or Latin America. Course taught as part of the summer study abroad program. Prerequisite: one year of college Spanish, or the equivalent. Elective Pass/Fail.

275-5 Second-Year Spanish: Business Course. A one-semester course using a business and commerce vocabulary which can be taken in lieu of the Spanish 201a,b sequence. Not open to native speakers of Spanish without permission of the Spanish section. Prerequisite: 175 or 140a,b or equivalent. Elective Pass/Fail.

305-2 to 4 (2, 2) Advanced Conversation. Improvement of self-expression and aural comprehension. Expansion of vocabulary and idioms in Spanish. Not open to native speakers of Spanish without permission of the Spanish section. Prerequisite: 201b or 275 and 220. Elective Pass/Fail.

306-3 Intermediate Readings in Spanish. Intermediate readings in Spanish. Designed to improve reading skills in Spanish. Not open to native speakers of Spanish without permission of the Spanish section. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.

310-3 Spanish Literature 1700-1900. The literature of Spain in the periods of Neoclassicism, Romanticism, and Realism. Prerequisite: 306. Elective Pass/Fail.

315-3 Spanish American Literature. Literature in Spanish America during the 19th and 20th centuries. Prerequisite: 306. Elective Pass/Fail.

320-4 Third-Year Grammar and Composition. Extensive practice in translation and composition; special attention to grammar problems, idiomatic expressions, and syntactical features. Prerequisite: 201b, 275, or equivalent. Elective Pass/Fail.

370-3 Spanish Culture and Civilization. The cultural patterns and heritage of the Spanish people from earliest times to the present. Class discussion in Spanish will be emphasized in order to improve conversational skills. Prerequisite: 201b or 275 or equivalent. Elective Pass/Fail.

371-3 Spanish-American Culture and Civilization. A survey of the cultural heritage of the Spanish-American peoples. Class discussion in Spanish will be emphasized in order to improve conversational skills. Prerequisite: 201b, 275, or equivalent. Elective Pass/Fail.

388-3 Spanish as a Research Tool. Intensive study of Spanish as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

390-1 to 6 Independent Study in Spanish. Individual exploration of some question, author, or theme of significance within the field of Spanish literature, language, or culture. Prerequisite: consent of instructor.

412-3 Advanced Grammar and Composition. Designed to improve language skills beyond the level of 320. Selected grammar review and intensive practice in effective use of the written and spoken language through translations and free compositions. Prerequisite: 320. Elective Pass/Fail.

415-3 The Linguistic Structure of Spanish. Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching. Elective Pass/Fail.

417-3 History of the Spanish Language. Survey of internal and external history, from Vulgar Latin to Modern Spanish. Elective Pass/Fail.

419-3 Romance Philology. (Same as French 419.) Historical and comparative study of the major Romance languages: their phonology, morphology and syntax. Elective Pass/Fail.

425-3 Spanish Literature Before 1700. The literature of Spain from its beginnings in the Middle Ages through the Golden Age. Elective Pass/Fail.

430-3 The Golden Age: Drama. Plays of Lope de Vega, Calderon, Tirso de Molina, and others. Elective Pass/Fail.

431-3 Cervantes. *Don Quixote.* Elective Pass/Fail.

434-3 Colonial Literature in Spanish America. Study of the literature of Spanish America before 1825. Elective Pass/Fail.

435-3 Business Spanish. Discussion and practice of the vocabulary, styles, and forms used in Spanish business correspondence, as well as report writing and documents dealing with trade, transportation, payment, banking, and advertising. Prerequisite: 320. Elective Pass/Fail.

460-3 Spanish Literature of the 20th Century. The main currents and outstanding works in the literature of Spain since 1900. Elective Pass/Fail.

463-3 Chicano Literature. An introduction to the literature written in the United States by Chicanos and other Hispanics.
485-3 The Spanish American Short Story. Survey of the genre in Spanish America. Elective Pass/Fail.
486-3 Spanish American Drama. A survey of the development of the genre from the earliest times to the present. Elective Pass/Fail.
487-3 The Spanish American Novel. Survey of the genre in Spanish America. Elective Pass/Fail.
488-3 Advanced Spanish as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirements for foreign languages as research tool. Prerequisite: 388 or one year of Spanish or equivalent.
490-1 to 3 Advanced Independent Study. Individual exploration of some topic in Hispanic literature, language, or culture. Prior consent of instructor required.
502-3 to 6 (3, 3) Seminar in Hispanic Linguistics.
503-3 to 6 (3, 3) Seminar in Peninsular Spanish Literature.
504-3 to 6 (3, 3) Seminar in Spanish-American Literature.
521-3 Medieval Spanish Literature.
530-2 to 4 (2, 2) Spanish Literature of the Renaissance and Golden Age.
535-2 to 4 (2, 2) Spanish American Literature before 1900.
540-2 to 4 (2, 2) Spanish Literature of the 18th and 19th Centuries.
560-2 to 4 (2, 2) Spanish Literature of the 20th Century.
565-3 to 6 (3, 3) Spanish American Literature of the 20th Century.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Forestry (Department, Major, Courses)

Three specializations are offered within the major in forestry. General Education requirements and a core of professional courses are similar for most specializations. Courses specifically required in the various specializations may not be taken for pass/fail credit by students majoring in the Department of Forestry. The forest resources management and outdoor recreation resource management specializations are accredited by the Society of American Foresters.

Available to the Department of Forestry for teaching and research in addition to resources present on campus are the following: the Crab Orchard National Wildlife Refuge; the Shawnee National Forest; a number of state parks and state forests; conservation areas; and the Kaskaskia Experimental Forest. Collectively, these comprise more than a million acres of forest land, all in the vicinity of the University. Also accessible for forest products utilization teaching and research is a wood products plant located near the campus. Forest scientists of the U.S. Forest Service are affiliated with the Department of Forestry, and are authorized to participate in the educational activities of the department.

Bachelor of Science Degree, School of Agriculture

FORESTRY MAJOR – OUTDOOR RECREATION RESOURCE MANAGEMENT SPECIALIZATION

The program in outdoor recreation resource management provides interdisciplinary training for management of the nation's outdoor recreation heritage. The courses offered are among those recommended by the National Recreation and Park Association and the Society of American Foresters. The outdoor recreation resource management student travels through selected sections of the United States on a park and recreation field studies session of outdoor recreation and park facilities. The summer camp requires the student pay transportation and living expenses. Other courses in this program may also require additional fees.

Resource Management Specialization	85
Forestry Core 200, 201, 202a, 202b, 300, 310, 311, 315, 331, 409, 410, 411, 314 or Botany 357	35
Biology 307; Botany 200, Chemistry 140a,b	(9)[1] + 6
Agribusiness Economics 204, Agricultural Education and Mechanization 371	(3)[1] + 2
GE-C 205, GE-D 101, 118, 153, Mathematics 140, 283	(14)[1] + 4
Plant and Soil Science 240, 328a, b, Geography 310	11
Forestry 422C Park and Recreation Field Studies Camp	4
Forestry 320, 420, 421, 423, 470	13
Select at least 6 hours from Forestry 405, 416, 430, Zoology 468a, b	6-7
Restricted Electives	6-7[2]
Total	130

[1]Hours included in total for General Education requirements.
[2]To be elected from forest sciences, business or administration, law or law enforcement, or recreation.

FORESTRY MAJOR — FOREST SCIENCE SPECIALIZATION

The forest science specialization is available for students desiring to enter a graduate program and concentrate in a given area of knowledge. The program provides maximum flexibility to enable students and their adviser to construct individual programs within a specific field of study. The program of study may be selected from any subject area within the competence of the Department of Forestry faculty. Students must have a grade point average of 3.00 or higher in university or college level work to be eligible to enroll and remain in this specialization. New students may enroll upon recommendation of an adviser in the Department of Forestry. The student and an advisory committee comprised of at least two departmental faculty members will develop a program of study designed to meet the needs and objectives for the area of specialty selected. If the student wishes to qualify for employment registers as a forester or for other specific natural resources positions, the student and committee advisers must design a program that is carefully structured.

General Education Requirements	45
Requirements for Major in Forestry with Forest Science Specialization	75
Forestry Core 200 ,201, 202a, 202b, 300, 310, 311, 315, 331, 409, 410, 411, 314 or Botany 357	35
Forestry and related electives	40[1]
Total	120

[1]The student and the academic advisers will select courses designed to meet the needs and objectives for the area of specialty selected.

FORESTRY MAJOR — FOREST RESOURCES MANAGEMENT SPECIALIZATION

The program in forest resources management includes instruction leading to careers in forest management and production, multiple-use resource management, and the forest products industries. The specialization includes areas of study recommended by the Society of American Foresters. Emphasis is upon integrated resource management of natural and renewable resources, coordinating forest utilization methods and conservation practices, and preserving our wildlands heritage. A five-week summer camp is required after the junior year to give the student practical field experience. Field study costs per student for off-campus living expenses and transportation are approximately $150 per student and must be borne by student. Other costs for equipment and supplies which are required for field study and certain other courses are specified in course descriptions.

General Education Requirements	45
Requirements for Major in Forestry with Forest Resources Management Specialization	85
Forestry Core 200, 201, 202a, 202b, 300, 310, 311, 315, 331, 409, 410, 411, 314, or Botany 357	35
Biology 307; Botany 200; Chemistry 140a,b; GE-A 118	(12)[1] + 7
Agribusiness Economics 204, Agricultural Education and Mechanization 371, 374	(3)[1] + 4
GE-D 101, 118, 153; Mathematics 140, 283	(11)[1] + 4
Five-week early summer field studies: Forestry 300C, 310C, 314C, 320C	6
Forestry 412, 416	5
Plant and Soil Science 240	4
Two courses selected from Forestry 320, 350, 405, 460	4
Two courses selected from Forestry 313, 402, 420, 430	6
Restricted electives	10[2]
Total	130

[1]Hours included in total for General Education requirements.
[2]Select one of the following plans: (1) complete at least one course (a total of 10 hours) in each of the following areas: forest and biological sciences, physical sciences, computer science and statistics, business and economics; or (2) complete a total of 10 hours within a single area selected from the above four with approval of a faculty adviser.

Courses

200-1 Introduction to Forestry. Acquaints students with the broad field of multiple-use forestry. Special emphasis is given to forestry as a profession. Required field trips cost $15. Elective Pass/Fail.

201-3 Ecology of North American Forests. An introduction to forest ecology concepts, site factors, and forests of North America. Emphasis is placed on the silvics of tree species and the impact of soil, climate, and topography on forest vegetation. Forest site-community relationships of selected major North American forest ecosystems will be studied. Saturday field trip may be required at a cost not to exceed $10. Prerequisite: Botany 200, Plant and Soil Science 240, Biology 307, or consent of instructor.

202-2 (1, 1) Tree Identification Laboratory. A two-semester course that teaches field and laboratory identification of trees and shrubs using leaf, twig, bark, and fruit characteristics. Saturday field trips may be required. Extra costs total $20 unless paid in 201. Must be taken in a,b sequence, unless otherwise arranged with consent of instructor. Prerequisite: Botany 200.

300-3 Forest Resources Measurements. Introductory measurement, statistical and data processing concepts; volume, growth and yield of forest products; methods of sampling forest resources. Field trips. Prerequisite: Mathematics 140 and 283.

300C-1 Forest Resources Measurements Field Studies. Methods of determining volume and quality of forest products, forest resource inventory procedures, growth and productivity studies. Field trips. Prerequisite: 300.

301-3 Social Influences on Forestry. Study of, and practice in, methods used for effecting social change in forestry and allied natural resource fields. Case studies, readings, and actual practice in techniques are used to develop an understanding of historical and current trends. Prerequisite: a course in sociology and a course in political science.

310-4 Practices of Silviculture. Detailed study of classical concepts and recently developed techniques utilized in silvicultural treatment of forests. Major emphasis to be placed upon establishment, thinning, timber stand improvement, and regeneration of forest. Prerequisite: 331.

310C-2 Silviculture Field Studies. Field experience for the student in the various facets of silviculture including planting, thinning, harvesting, timber stand improvement and site-growth relationships. Offered only at summer camp. Costs for students are given in forestry description. Prerequisite: 331 and 310.

311-3 Resources Photogrammetry. The science and art of obtaining reliable measurement by means of photographs, detection of disease, insects and fire invasion by remote sensors; and delineation of resources boundaries through interpretation.

313-3 Harvesting Forest Crops. Emphasis is given to lumber sale layouts, sale contracts, and harvest engineering methods. Consideration is given to the environmental impacts of harvesting. Additional cost: $25. Prerequisite: 310 and 312.

314-3 Insect, Abiotic, and Other Stresses Within the Forest. The impact, recognition, and control of destructive forces within the forest environment. Emphasis placed upon stresses due to climatic factors, macro-parasitic plants, chemical injury, pollution, animal damage, and forest insect pests. Prerequisite: 331, Botany 200, and GE-A 118 or consent of instructor.

314C-2 Forest Protection Field Studies. The prevention and suppression of forest fires, the recognition and control of insect and disease organisms and other destructive agents in the forest. Summer camp only. Cost per student given in the forestry description. Requires additional expenses of approximately $20 per student. Prerequisite: 331 and two of the following: 314, 315, Botany 357.

315-3 Fire in Wildland Management. Fire as a phenomenon in wildland management. Topics are fire prevention, detection, suppression, behavior, effects, use, and economics. Major emphasis is on fire control and fire ecology. Prerequisite: 331.

320-2 Recreation in Wildlands Environments. Trends in recreational use of wildland environments and emphasis on state and federal parks and forests. Introductory concepts in recreation management, planning, and interpretation.

320C-1 Forest and Wildlands Recreation Field Studies. Recreation of forest and adjacent lands with emphasis on parks and national forests. Administration; interpretation; trends in use and development. Offered only at spring camp (costs per student are given in the forestry description). Requires supplemental purchases of approximately $2 per student.

331-3 Forest Ecosystems. An analysis and integration of tree growth and of forest structure, material and energy flow, and classification in relation to climatic and edaphic factors to provide an ecological basis for management of forest ecosystems. Prerequisite: 201, 202, Biology 307, Plant and Soil Science 240.

341-3 Forestry Practices. The fundamentals of integrated resource management of timberlands. Management systems, tree and stand measurements. Planting and harvesting methods, multiple-use aspects of forest lands. Field trips. Emphasis on small forest ownerships. Not for graduation credit in forest resource's management option.

350-2 Woods as a Raw Material. Structure, identification, and properties of wood. Important species and the significance of wood use to the environment.

381-1 Forestry Seminar. Discussion of problems in or related to forestry. Prerequisite: junior standing, minimum 2.5 GPA, and consent of instructor.

391-1 to 4 Special Problems in Forest Resources. Independent research sufficiently important to require three hours per week of productive work for each hour of credit.

401-3 Fundamentals of Environmental Education. (See Agriculture 401.)

402-3 Wildland Hydrology. Fundamentals of hydrology as related to forest and wildland water resources will be emphasized. Considerations will include the hydrologic cycle with emphasis on soil and groundwater regimes, evapotranspiration, surface and subsurface runoff, and the quantity and timing of water yield. Prerequisite: Mathematics 140.

405-2 Forest Management for Wildlife. Interrelations between forest practices and wildlife populations. Emphasis is on habitat requirements of different wildlife species and ways to manipulate the forest to improve wildlife habitats. Prerequisite: forestry major, or consent of instructor.

408-4 Introduction to Remote Sensing. The course is an introduction to the theoretical and practical considerations of remote sensing for an interdisciplinary audience. Coverage will stress background information about the electromagnetic spectrum, reflectance characteristics of various objects, sensors, filters, platforms and energy flow between object and sensor. Prerequisite: advanced standing or graduate status.

409-4 Forest Resources Decision-Making. Examines management planning decision-making for multiple-use forests particularly in the public sector. Reviews concepts useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative methods to evaluate resource use alternatives. Case studies. Prerequisite: 411, Mathematics 140.

410-3 Forest Resources Administration and Policy. Nature of administrative organizations and influences on behavior of organization members. Society influences causing changes in forestry related organizations. Policy formation and implementation, including roles of special interest groups.

411-3 Forest Resources Economics. Introduction to forest economics: Application of micro- and macro-economic principles to forest timber and non-timber production; capital theory; benefit-cost analysis; and economics of conservation. Prerequisite: Agribusiness Economics 204 and Mathematics 140.

412-2 Tree Improvement. Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Prerequisite: senior standing.

414-3 Information Management. The collection of physical, biological, and social variables in the field of forestry through sampling survey. The procedures of data manipulation and calculation and the presentation of graphs and tables.

416-3 Forest Resource Management. The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource

management for tangible and intangible benefits. Field trips and supplemental purchases approximately $25 per student. Prerequisite: summer camp or consent of instructor.

417-2 Forest Land-Use Planning. Principles of location theory as a basis for determining land use; supply of forest land; population pressure and demand; conservation principles; determination of forest land values; institutional factors influencing forest land-use; forest taxation; special taxes, and capital gains. Taught in alternate years. Prerequisite: 411 or consent of instructor.

418-2 Marketing of Forest Products. The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing organization, and marketing research as influences on the marketing of lumber, wood products, pulp, and paper. Taught in alternate years. Prerequisite: 411 or consent of instructor.

420-3 Park and Wildlands Management. The management of state and federal parks and recreation areas. A systems approach toward management and decision-making will be emphasized. Requires supplemental purchases of approximately $5 per student. Prerequisite: 320C or 422T.

421-3 Recreation Land-Use Planning. Principles and methods for land-use planning of park and recreation environments with emphasis on large regional parks. Focus on planning process and types of information to gather and organize. Application in group field projects. Prerequisite: 320, 420, or consent of instructor.

422C-4 Park and Wildlands Management Camp. A study of park conditions, visitors, and management practices at selected county, state, and federal park systems in the United States, including the federal wilderness preservation system. Course requires a field trip and supplemental purchases. Prerequisite: 320 and 320C and consent of instructor.

423-3 Environmental Interpretation. (See Agriculture 423.)

429-4 Wildland Watershed Analyses. A lecture/laboratory course designed to provide a practical knowledge of the equipment, procedures, and tests used in determining the quality and quantity of waters flowing within and out of wildlands. Prerequisite: Chemistry 140a.

430-3 Wildland Watershed Management. Emphasis is placed on the principles, technical problems, procedures, alternatives, and consequences encountered in managing wildland watersheds for the production of quality water in harmony with other uses. Prerequisite: 331.

431-3 Regional Silviculture. Designed to evaluate the various silvicultural practices as they are commonly employed in various regions of the United States. Offered alternate years. Prerequisite: 310C.

451-2 Natural Resources Inventory. Theory and practical problems in biometrics to obtain estimates of natural resource populations. Use of computers and other advanced techniques. Case studies of inventory procedures. Field trip cost — maximum $20. Prerequisite: 300 or consent of instructor.

452-2 Forest Soils. Characterization and fundamental concepts of forest soils and their relationship to forest communities and forest management practices. Emphasis is on the origin of forest soil material, soil forming processes, and the chemical, physical, and biological properties of soils as related to forests and forest management. Prerequisite: Plant and Soil Science 240 and concurrent enrollment in Forestry 452L.

452L-2 Forest Soils Laboratory. Companion laboratory for 452. Emphasis is on methods to characterize and evaluate the chemical, physical, and biological properties of forest soils. Prerequisite: Plant and Soil Science 240 and concurrent registration in Forestry 452.

453-2 Environmental Impact Assessment in Forestry. Methods of assessing the environmental impact of land-use systems on forest resources and assessing the impact of forest management systems on environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Field trips cost, $20. Prerequisite: senior standing in a natural resource major.

454-2 to 8 Forest Ecology Field Studies. A study of forest communities, soils, and site conditions in one of the following ecosystems: **(a)** Boreal; **(b)** lake states; **(c)** Southern Appalachians; **(d)** Southern pine. Course requires a field trip of about 10 days. Each trip is two semester credits; a maximum of 6 credits may be applied toward graduate credit. Estimated cost $125.00 per trip. Prerequisite: senior standing in natural resources or biological sciences, courses in tree indentification, forest ecology, and soils, and consent of instructor.

460-2 Forest Industries. Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed.

470-2 Wilderness Management, Policy, and Ethics. Study of current management philosophy and practice in America's wilderness. Analysis of current wilderness policy and its historical evolution. Discussion of the evolution of the wilderness idea and the individuals that have influenced it. Weekend field trip required. Prerequisite: 320 or consent of instructor.

492-1 to 4 Special Studies for Honor Students. Research and individual problems in forestry. Not for graduate credit. Prerequisite: consent of the department chairperson and a 3.0 minimum grade point average.

494-1 to 6 Practicum. Supervised practicum experience in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school,

park, forest, institution and public or private agencies. Students should enroll according to their curriculum specialization: (a) Forest environmental assessment, (b) Outdoor recreation resource management, (c) Forest resources management. Prerequisite: consent of instructor.
500-2 Principles of Research.
501-1 Graduate Seminar.
511-2 Advanced Forest Resources Economics.
512-2 Tree Selection and Breeding.
516-2 Advanced Forest Management.
520-2 Advanced Park Planning.
521-2 Recreation Behavior in Wildlands Environments.
530-2 Forest Site Evaluation.
531-2 Biological Productivity of Forests.
588-1 to 6 International Graduate Studies.
590-1 to 4 Readings in Forest Resources.
593-1 to 4 Individual Research.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Geography (Department, Major, Courses)

The Department of Geography offers three programs to undergraduate students. The Bachelor of Arts and the Bachelor of Science are offered through the College of Liberal Arts and the Bachelor of Science degree is offered through the College of Education. A minor is required of all geography majors and should be arranged in consultation with the department. Junior college transfer students interested in geography are encouraged to visit the department to determine possibilities for waivers, proficiencies, and transfer credit substitution.

Honors in geography is a special three semester program available to majors with an overall grade point average of 3.00 or better. Interested students should apply during the junior year to obtain departmental consent prior to initiation of an honors program.

The core of the major program involves 300- and 400-level courses. Geography 300, the first course in a major's program, gives a basic foundation in the topics and fields of research within geography. It acquaints students with the viewpoints and methods of geography, the concepts and theories in geography, and maps and quantitative methods, the basic techniques and tools used by the geographer. In addition to Geography 300, at least three 300-level and three 400-level courses are required. Offered are 400-level courses in resource management and physical environment systems, urban and regional planning, and geographic techniques.

The minor requirement for geography majors may be formed in either of two ways. It may be a regular minor from another department or it may be an interdisciplinary selection of courses created in consultation with the department.

Students minoring in geography must take Geography 300 or GE-B 103, three 300-level courses and one 400-level course. Geography 300 has been approved as a substitute for GE-B 103 for the General Education requirement. Social studies students with a 9-hour concentration must take Geography 300 or GE-B 103 and complete their concentration with electives from geography.

Bachelor of Arts or Bachelor of Science Degree, College of Liberal Arts

GEOGRAPHY MAJOR – GENERAL

These courses provide the base for those seeking a broad understanding of the field of geography and who have interests in preparing for graduate study or in applying geography in teaching, industry or government.

General Education Requirements	45
Supplementary College Requirements (See Page 75)	(4) + 8-14
Requirements for Major in Geography	30-32
Geography 300 or GE-B 103	3

Any three: Geography 302, 304, 306, 310, or one regional course	8-9
Any 400 level courses	11-12
Electives in Geography selected with the approval of the department	6-8
Minor (or selection of courses complementary to major)	15
Electives	14-22
Total	120

GEOGRAPHY MAJOR — ENVIRONMENTAL STUDIES AND PLANNING SPECIALIZATION

These courses are for those interested in entering the planning field or in preparing for graduate study in urban or regional planning or some aspect of environmental analysis.

General Education Requirements	45
Supplementary College Requirements (See Page 75)	(4) + 8-14
Requirements for Geography Major with Environmental Studies and Planning Specialization	30
Geography 300, 302, 310, 410, 421, 424, 425, 432, and 470a or 471	
Minor Equivalent (15 hours)	15
Many courses offered in other departments support the geography major with an emphasis in environmental planning. For a complete list see the geography undergraduate program director or the College of Liberal Arts Advisement Center.	
Electives	16-22
Total	120

Bachelor of Science Degree, College of Education

General Education Requirements	45
Requirements for Major in Geography	31-33
Geography 300 or GE-B 103 and 443	6
Any three: 302, 304, 310, 326, or one regional course	8-9
Any 400 level courses	11-12
Electives in Geography selected with the approval of the department	4-6
Professional Education Requirements	28
Curriculum, Instruction, and Media 469 is required. See Teacher Education Program, page 66.	
Minor (or selection of courses complementary to major)	15[1]
Electives	0-1
Total	120-121

[1]Students who intend the use of the minor for teacher certification must complete a minimum of 18 semester hours in the minor.

Minor

COLLEGE OF LIBERAL ARTS

A minor in geography requires	15-16
Geography 300 or GE-B 103	3
Any three: 302, 304, 306, 310 or one regional course	8-9
400 level courses	3-4

COLLEGE OF EDUCATION

A minor in geography requires	18-20

Geography 300 or GE-B 103	3
Any two: 302, 304, 306, 310, or one regional course	5-6
400 level courses	7-8
Geography 443	3

Courses

202-2 Contemporary World Geography: Selected Regions and Places. A geographic study of selected regions and places of particular or current interest in the world. Some attention given to world overview and place names.
212-2 Maps and Mapping. History of cartography; properties, and sources of maps and air photos.
224-3 Geography of Natural Hazards. Damage from natural hazards in the United States is on the rise while loss-of-life has been declining. Losses from earthquakes, floods, hurricanes, tornadoes, drought, hail and urban snow in the United States are reviewed. The range of alternatives to cope with natural hazards are appraised; and special attention is given to problems characteristic of all natural hazards — warnings, relief and rehabilitation, insurance, and land-use management.
257-1 to 5 Concurrent Work Experience in Geography. Concurrent work experience in tasks specifically related to the field of geography and such as are found in cartography and map work, climatology, and resource management. Prerequisite: geography major and consent of department. Mandatory Pass/Fail.
258-1 to 5 Past Work Experience in Geography. Past work experience in tasks specifically related to the field of geography such as are found in cartography and map work, climatology, and resource management. Prerequisite: geography major and consent of department. Mandatory Pass/Fail.
300-3 Introduction to Geography. The nature of geography, the kinds of problems which it investigates, the methods which it uses. Charges not to exceed $5 for field trips.
302-3 Physical Geography. A study of the earth's physical surface, world distribution patterns of the physical elements, their relationship to each other and their importance to people. Field trip and laboratory work. Charges not to exceed $5 for field trips. Prerequisite: 300 or consent. Elective Pass/Fail.
304-3 Economic Geography. Study of the spatial distribution and interaction of economic activities. Introduction to locational theory. Prerequisite: 300 or consent. Elective Pass/Fail.
306-3 Cultural Geography. An overview of the geographic viewpoint in the study of the human occupance of the earth. Aspects of population, settlement, and political geography are treated, and a generalized survey of major world cultural areas is used to integrate course elements. Prerequisite: 300 or consent. Elective Pass/Fail.
310-3 Introductory Cartography. Properties of maps and air photos, their use and sources; map symbols, map projections and map construction. Introduction to the use of quantitative techniques as applied in geographic study. Laboratory. Charges not to exceed $2 for supplies. Prerequisite: 300 or consent. Elective Pass/Fail.
326-3 Geography of Urban Environments. Explores the historic and present relationship between people and the urban environment, and between urban places and the sites which they occupy. Systems of measuring environmental quality are reviewed along with methods of assessing and forecasting change in the total urban environment. Elective Pass/Fail.
331-2 The Human Use of Climate. Introduces the basic concepts in the functioning of the climatic environment at the earth's surfaces and develops a holistic view of the way parts and processes of the earth interact through exchanges of energy and water with reference to questions of the human use of the earth. Elective Pass/Fail.
332-3 Oceanography. A systematic review of the world's oceans, with study of the nature of ocean water, the role of oceans in the Hydrologic Cycle, characteristics of ocean basins, the transport of ocean water, materials and energy exchanges in the oceans, and ocean management and resource problems. Elective Pass/Fail.
360-3 Geography of Illinois. Introduces and explores some of the spatial elements of the physical and human geography of the State of Illinois through a comparative analysis of the urban and rural lifespace. Specific geographic issues and problems are selected by the students for group discussion and analysis. Charges not to exceed $5 for field trips. Elective Pass/Fail.
362-2 Regional Geography of Europe. Introduces present-day Europe. Survey of the area and an investigation of problems and issues affecting the region. Elective Pass/Fail.
363-2 Regional Geography of Mediterranean Lands and Southwestern Asia. Geography of northern Africa and the Near East in a systematic context. Settlement and land use patterns, cultural history and diversity, and contemporary problems. Elective Pass/Fail.
364-2 Regional Geography: Soviet World. Introduction to and survey of the Soviet world and investigation of problems and issues affecting the region. Elective Pass/Fail.
365-2 Regional Geography of Subsaharan Africa. (Same as Black American Studies 380.)

Analysis and explanation of emerging spatial pattern of socio-economic development in Africa as most meaningful to the geographer in assessing the continent's transition from traditional to modern political, social, and economic systems. Elective Pass/Fail.

366-2 Regional Geography: Eastern and Southern Asia. Introduces present-day Eastern and Southern Asia. Survey of the area and an investigation of problems and issues affecting the region. Elective Pass/Fail.

367-2 Regional Geography of South America. Analysis of the landscapes of tropical and Andean South America. Historical background of current patterns and problems. Present and future development problems in terms of natural resources, economic, and agriculture systems, and ethnic and settlement patterns. Elective Pass/Fail.

368-2 Regional Geography of Middle America. Interrelationships of groups of humans and their physical and social environments in Middle America. Emphasizes historical depth of perspective. Clarifies the origin of problems in the region. Elective Pass/Fail.

369-2 Regional Geography of Oceania. Introduces present day Oceania. Survey of the area and investigation of specific problems and issues affecting the region. Elective Pass/Fail.

400-3 Geography of Outdoor Recreation. Analysis of patterns of outdoor recreation with an emphasis on metropolitan areas. Selected topics include demand forecasting methods, cost-benefit analysis and the valuation of recreation resources, and an analysis of the socioeconomic and spatial impacts of recreation facility provision. Elective Pass/Fail.

404-3 Spatial Analysis. The purpose of this course is to equip the student with a series of perspectives and tools with which to view spatial phenomena. Emphasis is placed on methodological approaches to the analysis of areal distributions and phenomena. Longitudinal analysis of data is included. Prerequisite: 300. Geography 410 is advisable or consent of instructor. Elective Pass/Fail.

406-2 Advanced Social Geography. Deals with one or more of the following: population, settlement, ethnic characteristics, political factors; depending on, and varying with, interests of the instructors. Thus, a student may register more than one time. Emphasis will be directed at familiarizing the student with techniques of analysis, and at developing concepts and principles that underlie understanding of the phenomena and their geographic significance. Prerequisite: 306 or consent. Elective Pass/Fail.

410-4 Techniques in Geography. Geographic applications of basic and advanced statistical and mathematical techniques, including basic descriptive statistics, hypothesis testing, regression and correlation, analysis of variance, and nonparametric statistics. Special emphasis on areal measures: nearest neighbor analysis, etc. Prerequisite: 300 or consent. Elective Pass/Fail.

416-4 Specialized and Computer Mapping. Introduction to computer mapping, mapping from air photos, specialized cartographic problems based on individual student interests. Laboratory. Charges not to exceed $2 for supplies. Prerequisite: 310 or consent. Elective Pass/Fail.

418-3 Management of Spatial Data Bases. Introduces students to the use of specialized computer programs for the collection, storage, analysis, and mapping of spatial data. A simplified methodology makes the techniques available to students with no previous computer experience. Prerequisite: 310, 304, or consent of instructor. Elective Pass/Fail.

421-2 Urban Geography. Examination of extracity relationships — theory and structure; intra-city relationships — theory and structure, and selected urban problems. Offered once annually. Prerequisite: 300 or consent. Elective Pass/Fail.

422-4 Economics in Geography and Planning. (Same as Economics 425.) Concepts, symbols, language, theory, and elementary mathematics of economics and geography. Individual's preferences, production functions, the firm, markets, optimality, externalities, and welfare economics. Elementary mathematics of time and intertemporal criteria. Prerequisite: 304 or consent of instructor. Elective Pass/Fail.

424-4 Natural Resources Planning. Literature in resource management problems. Emphasis on theory, methods of measurement and evaluation concerning implications of public policy. The role of resources in economic development and regional planning, water and related land resource problems, and environmental quality from a multi-disciplinary perspective. Prerequisite: 304 or consent. Elective Pass/Fail.

425-4 Water Resource Planning Simulation. A review of water resource planning theory and practice from a physical, technological, economic, social, and geographical viewpoint. Students design a comprehensive water resource plan including flood control, water supply, water quality, and recreation for a city of 175,000 population. This plan is "Played" against a 50-year trace of hydrologic parameters in a computer simulation. Prerequisite: 424 or consent. Elective Pass/Fail.

426-4 Administration of Environmental Quality and Natural Resources. (Same as Political Science 445.) An examination of institutional arrangements and administrative practices in the protection and use of land, water, air, and mineral resources. The course includes analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legis-

lation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act, and the Surface Mining Reclamation Act. Prerequisite: 300, or 326, or consent of instructor. Elective Pass/Fail.

427-3 Environmental Perception and Planning. Deals with a description and assessment of the relevance of normative and descriptive theories of decision-making and theories of choice for public policy and environmental management. Studies of the perception of urban environments and other landscapes such as wilderness areas, and perception of and human response toward natural hazards will be considered. Prerequisite: 300 or consent. Elective Pass/Fail.

430-3 Theory of Environment. Exploration of the hypothesis that the physical environment works on local hydrology, soils, and natural vegetation, agriculture, and landforms, through energy and moisture exchanges. Emphasis on model building for comparison of subsystems, to rate effectiveness of contrasting environments, and to project these consequences to environmental management questions. Prerequisite: 302 or consent. Elective Pass/Fail.

431-2 Medical Geography. Deals with the distribution of diseases and attempts to use the operational concepts of human ecology as a point of departure. A brief historical outline and an introduction to public health, epidemiology, and related fields is provided. Problems of communicable and chronic diseases, nutritional deficiency, geochemical relations, biometeorology and medical climatology, environmental pollution, and seasonal disease calendars are emphasized. Taught by Department of Geography staff. Prerequisite: 300 or consent. Elective Pass/Fail.

432-4 Physical Environments of Cities. Energy and moisture budget concepts are developed from basic principles. Microclimatic data, instrumentation and applications stress urban examples. Models of climatic effects and modeling of people's effects concern city climates mainly. Charge not to exceed $5 for field trips. Prerequisite: 302 or 430 or consent. Elective Pass/Fail.

433-3 Advanced Physical Geography. Topics may include landforms, climate, soil or water. Varies with the interest of the instructor. Prerequisite: 302 or consent. Elective Pass/Fail.

434-4 Water Resources Hydrology. Microclimatic factors which affect the hydrologic events of various climatic regions are treated extensively. Methods of estimating geographic variations in hydrologic relations to climatic and microclimate especially evapotranspiration, are compared and evaluated. Consequences of alternative land uses on climate and hydrology are considered regionally. Charges are not to exceed $10 for field trips. Prerequisite: 302 or 430 or consent. Elective Pass/Fail.

435-3 Solar and Alternate Energy Planning. Regional and national strategies for energy supply and demand are reviewed followed by a study of current energy resources, reservoirs, and the range of demands and environmental impacts. Community and national planning strategies for increasing the use of solar and alternate energies are explored, simulated by analog computer, and assessed for present and future implementation probability. Field trip expenses not to exceed $10. Prerequisite: 300. Elective Pass/Fail.

438-3 Applied Meteorology. Analysis of meteorological patterns approached through study of several case histories. Evaluation of meteorological data, air mass and frontal analysis, development of weather forecasts, study of meteorological instruments, clouds, and precipitation patterns. Charges not to exceed $5 for field trips. Prerequisite: GE-A 330 or consent of instructor. Elective Pass/Fail.

439-3 Climatic Change — Inevitable and Inadvertent. The geologic time-scale perspective of major natural events that have affected the theoretical steady-state climate, and factors in contemporary societal practices that have brought about inadvertent climatic modification. An assessment of the means and extremes of parameter values in the geologic time-scale perspective studied will be compared with the documented and present-day climatic parameter means and extremes. Approaches to prognoses for the Earth's future climatic state will be made. Charges not to exceed $10 for field trips. Prerequisite: 330, 331, or consent of instructor. Elective Pass/Fail.

440-2 Tutorial in Geography. Prerequisite: geography major, senior standing.

443-3 Teaching of Geography. Presentation and evaluation of methods of teaching geography. Emphasis upon geographic literature, illustrative materials, and teaching devices suitable to particular age levels. Charges not to exceed $3 for field trips. Prerequisite: 300. Elective Pass/Fail.

470-6 to 9 (3, 1 or 2, 2 to 4) Urban Planning. (a) Planning concepts and methods. (Same as Political Science 447a.) Charges not to exceed $8 for field trips. (b) Field problems. (Same as Political Science 447b.) (c) Planning and public administration internship (for undergraduate credit only). Prerequisite: 326 or 421 or consent of instructor. Elective Pass/Fail.

471-3 Regional Planning. A study of the viewpoints, methodology, and experiences of various types of regional planning in the United States; some attention given to state and national scale planning. Prerequisite: 300 or consent. Elective Pass/Fail.

487-6 (1, 2, 3) Honors in Geography. (a) Honors tutorial; (b) Honors reading; (c) Honors supervised research. Must be spread over the last two years of the undergraduate's career. May be taken in either a,b,c, or b,a,c, sequence. Prerequisite: consent of department. Elective Pass/Fail.

490-2 to 4 Readings in Geography. Supervised readings in selected subjects. Prerequisite: geography major, advanced standing. Elective Pass/Fail.
500-4 Principles of Research.
510-4 Multivariate Techniques in Geography.
511-2 Philosophy of Geography.
514-2 College Teaching of Geography.
520-2 to 4 Seminar in Physical Systems Evaluation.
521-2 to 4 Seminar in Resource Planning.
522-4 Seminar in Economics in Geography and Planning II.
524-2 to 4 Seminar in Social Geography.
527-2 to 4 Seminar in Urban and Regional Planning.
570-2 to 4 Planning Internship.
591-2 to 4 Independent Studies in Geography.
593A-2 to 24 (2 to 6 per semester) Research in Physical Geography.
593B-2 to 24 (2 to 6 per semester) Research in Economic Geography.
593C-2 to 24 (2 to 6 per semester) Research in Urban and Regional Planning.
593D-2 to 24 (2 to 6 per semester) Research in Social Geography.
596-2 to 4 Field Course.
599-2 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Geology (Department, Major, Courses)

In the field of geology a student may work toward either a Bachelor of Arts or Bachelor of Science degree.

The Bachelor of Arts degree requires a major in geology but is a flexible program, permitting a student to combine training in geology with courses in other areas of interest, such as peripheral sciences, management, or pre-law. A minor is optional. Having obtained a Bachelor of Arts degree, students may continue their education toward a Master of Science degree in geology, although it may be necessary to absolve deficiencies in physics and mathematics.

The Bachelor of Science degree requires a major in geology and courses in biology, chemistry, mathematics, physics, and science electives. This degree will ordinarily be pursued by students desiring to do graduate work in geology or to become professional geologists.

Bachelor of Arts Degree, College of Science

General Education Requirements		45[1]
Supplementary College of Science Requirements		6-7
Mathematics 108 and 109 or 111	(3) + 2-3	
Foreign Languages	(4) + 4	
Biological Sciences (Not General Education)	(6)[3]	
Requirements for Major in Geology		42-46
Geology 220, 221, 302, 310, 315, 325, 425, 474, and 450 or 454[4]	30-34	
Chemistry 222	8[2]	
Physics 203a, 253a or 205a, 255a	4[2]	
Electives		22-27
Total		120

[1]The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Courses will also meet the physical science requirement for the College of Science.
[3]If courses which have been approved as General Education substitutes are taken, they will count as a part of the 45 hours in General Education.
[4]The summer field geology course, Geology 454, should be taken between the junior and senior years.

Bachelor of Science Degree, College of Science

General Education Requirements	45[1]
Supplementary College of Science Requirements	6-7

Mathematics 108 and 109 or 111	(3)+ 2-3	
Foreign Languages	(4) + 4	
Biological Sciences (Not General Education)	(6)[4]	
Requirements for Major in Geology		68
Geology 220, 221, 302, 310, 315, 325, 415, 425, 454[3], 474	37	
Geology electives	5	
Mathematics 150	4	
Chemistry 222	8[2]	
Physics 203a,b, 253a,b or 205a,b 255a,b	8[2]	
Electives in supporting sciences or technology (to be approved by geology undergraduate adviser)	6	
Electives		1
Total		120

[1]The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]Courses will also meet the physical science requirement for the College of Science.
[3]The summer field geology course, Geology 454, should be taken between the junior and senior years.
[4]If courses which have been approved as General Education substitutes are taken, they will count as a part of the 45 hours in General Education.

Minor

A minor consists of 16 hours, determined by consultation with the geology adviser.

Courses

Courses with a laboratory may require purchase of a laboratory manual and a supply fee. All courses requiring field trips may have a field trip cost of approximately $2 to $7.

220-3 Physical Geology. Introduction to the structure and composition of the earth, and concept of geologic time, and the physical and chemical processes that operate to modify the earth and its surface. Speculations concerning the origin and early development of the earth. Two lectures and one three hour laboratory. One Saturday field trip required. Prerequisite: high school or college chemistry. Elective Pass/Fail.

221-3 Historical Geology. Principles and methods of interpreting Earth's history. General view and selected examples of Earth's physical, biological, and chemical history. Laboratory and field trips required. Prerequisite: 220; a biology course recommended. Elective Pass/Fail.

302-4 Fundamentals of Structural Geology I. An introduction to structural geology including a study of the forces involved in the deformation of the earth's crust, with special emphasis on the recognition and interpretation of the resultant geologic features. Laboratory and two Saturday field trips required. Prerequisite: 220, Mathematics 111. Recommended: Physics 203, or 205 or concurrent enrollment. Elective Pass/Fail.

310-4 Mineralogy. Rudiments of crystal structure, morphology and symmetry. Introduction to crystal chemistry. Study of the properties, chemistry, occurrence and identification of common rock-forming and economically important minerals. Lecture-laboratory. Prerequisite: 220, Chemistry 222. Elective Pass/Fail.

315-3 Igneous and Metamorphic Petrology. The characteristics and classification of igneous and metamorphic rocks, their origin and geologic distribution. Laboratory. Field trip required. Prerequisite: 310; 415 recommended. Elective Pass/Fail.

321-3 Fossils: Keys to Ancient Life and Environments. For non-majors. A knowledge of the origin, development, and distribution of ancient life, environments, and relations of life to environments is gained through the study of fossils and associated rocks. Examples of ancient environments, their fluctuations and changes are compared with fluctuations and changes in modern environments. Elective Pass/Fail.

325-4 Sedimentology and Stratigraphy. The characteristic features of sedimentary rocks and the physical and chemical processes responsible for their origin and diagenesis. The classification of stratigraphic units, methods of correlation, and paleogeologic reconstruction. Laboratory and field trips required. Prerequisite: 220, 221, 310; 415 recommended. Elective Pass/Fail.

330-3 Geology of Illinois. For non-majors and beginners. The physical nature of Illinois, its landforms, rocks and soil, geologic history of its formation, active processes and hazards today. Resource development, land and water use and management. Laboratory

provides for individual interests in collecting, photography, ecology, planning, etc. Elective Pass/Fail.

390-3 Introduction to Mining Geology. Structure and composition of the earth as these impact specifically on mining engineering problems; geologic time, sequence of events, major geologic provinces, types of ore deposits, use of core data, preparation and interpretation of geologic cross-sections. Two lectures and one three-hour laboratory. Two Saturday field trips required. Prerequisite: 220.

413-3 Quantitative Methods of Geology. An introduction to quantitative methods in a geological and earth sciences context. Topics introduced include sampling plans for geological studies, non-parametric tests of geological data, comparisons of geological samples, analysis of sequential geological data. Laboratories will deal with numerical examples from all areas of geology. Prerequisite: advanced standing and consent of instructor. Elective Pass/Fail.

414-3 Paleobotany. (See Botany 414.) Elective Pass/Fail.

415-3 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Lecture, laboratory. Prerequisite: 310, Physics 203b, or 205b. Elective Pass/Fail.

416-3 X-ray Crystallography. (Same as Chemistry 416.) Introduction to the study, measurement, and identification of unknown crystalline materials by X-ray diffraction techniques (especially the Debye-Scherrer methods). Upon request, non-geology majors may work with unknowns from their own fields of study. Prerequisite: 310, Mathematics 150 or consent. Elective Pass/Fail.

417-3 Isotope Geochemistry. Stable and radioactive isotopes and the applications of isotopic studies to igneous and metamorphic petrology, ore deposits, sedimentology, surface processes, geothermometry, and geochronology. Introduction to isotopic techniques and mass spectroscopy. Laboratory or research project required. Prerequisite: 310, 315 and 325 or consent. Recommended: Physics 203, Mathematics 150 and Geology 419.

418-3 Low Temperature Geochemistry. The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture, laboratory. Prerequisite: 310, Chemistry 222 or equivalent. Elective Pass/Fail.

419-4 Ore Deposits. The geological and other factors that govern the exploration for and occurrence of metalliferous mineral deposits. Study of the geological settings of the major types of ore deposits. Lecture, laboratories, and field trips. Prerequisite: 302, 315. Elective Pass/Fail.

420-3 Petroleum Geology. The geological occurrence of petroleum including origin, migration, and accumulation; a survey of exploration methods, and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum and natural gas. Prerequisite: 221, 302. Elective Pass/Fail.

425-4 Invertebrate Paleontology. Principles of paleontology and a survey of the important invertebrate phyla and their fossil representatives. Laboratory. Field trips required. Prerequisite: 221, a biology course. Elective Pass/Fail.

428-3 Paleoecology and Environments of Deposition. Characteristics, distribution, and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleoecological approaches. Recognition of ancient environments and environmental associations. Laboratory. Field trips required. Prerequisite: 425, 325 or concurrent enrollment. Elective Pass/Fail.

430-3 Physiography of North America. A regional study of North American landforms and their origins. The approach designed to give interaction among students, stimulus in organization and presentation of material and library competence. Plan a trip for optimum view of North American physiography. Prerequisite: 220. Elective Pass/Fail.

435-3 Hydrogeology. A problem-solving oriented course which covers the analysis and interpretation of the distribution, origin, movement, and chemistry of ground water. Laboratory. Prerequisite: 220, Mathematics 250. Elective Pass/Fail.

436-4 Elementary Exploration Geophysics. Theory and practice of geophysics as applied to the exploration and development of natural resources. Laboratory involves use of geophysical instruments and interpretation of data. Field trips required. Prerequisite: 220, Mathematics 150. Elective Pass/Fail.

437-3 Field Course in Geophysics. Use of geophysical equipment for collection, analysis and interpretation of seismic, gravity, magnetic, electrical, and other types of geophysical data. Prerequisite: 436 or consent.

440-1 to 4 Advanced Topics in the Geological Sciences. Individual study or research or advanced studies in various topics. Prerequisite: advanced standing and consent of instructor. Elective Pass/Fail.

445-3 Museum Studies in Geology. History, nature and purpose of geology in museums, relationships of geology to other museum disciplines, application of geologic methods to museum functions, preparation and preservation of specimens; nature, acquisition and utilization of geologic collections in museums, role or research in museums.

450-2 Introduction to Field Geology. Introduction to field techniques, principles of

geologic mapping and map interpretation. Field trip fee $5.00. Prerequisite: 302, 315 or concurrent enrollment. Elective Pass/Fail.

454-6 Field Geology. Advanced field mapping in the Rocky Mountains, including problems in stratigraphy, structure, petrology, paleontology, geomorphology, and economic geology. Transportation cost approximately $150, supplies $6. Prerequisite: 302, 315; 450 recommended. Elective Pass/Fail.

455-3 Engineering Geology. (Same as Engineering 455.) An examination of problems posed by geology in the design, construction, and maintenance of engineering works. Topics studied include ground water, land subsidence, earthquakes, and rock and soil mechanics. Two term papers and a field trip required. Prerequisite: 220 or consent. Elective Pass/Fail.

460-3 Geological Data Processing. Computer applications to geological problems including the processing and programming of data and the interpretation and evaluation of results. Lecture, laboratory. Prerequisite: Engineering 222 or Computer Science 202. Elective Pass/Fail.

462-3 Fundamentals of Structural Geology II. Intermediate topics in structural geology including strain theory, field strain analysis, geometry of complex mesoscopic structures and introduction to dislocations, deformation history, and microfabric analysis. Hypotheses and orogenesis are discussed and evaluated. Lecture and assigned problems only. Prerequisite: 302 or equivalent.

465-3 Evolution of Orogenic Belts. A combination of lectures and seminars in which the structural and petrological development of specific orogenic belts is investigated in detail. Prerequisite: 302, 315 or equivalent. Elective Pass/Fail.

474-3 Geomorphology. Study of erosional and depositional processes operating at the earth's surface and landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Prerequisite: 220. Elective Pass/Fail.

476-3 Pleistocene Geology. Deposits, stratigraphy, and history of the Pleistocene epoch. Evidence for differentiating and dating the glacial and interglacial sequence examined including deep sea cores, soils, magnetic studies. Required field trips. Prerequisite: 220, 221. Elective Pass/Fail.

478-3 Environmental Geology. Identification of geological conditions and processes which affect people's use of the environment: earth materials and structure, climate, water, topography, active geologic processes, hazards; impact of extraction, construction, water collection and control, and waste disposal. Introduction to aims and responsibilities of government regulatory agencies, environmental groups, and industry. Lecture, laboratory, field trips, individual projects, and reports. Prerequisite: 220 or equivalent and advanced standing.

480-3 Geology of Coal. Geology as related to exploration, development and mining of coal; stratigraphy, sedimentation and structure of coal deposits; type of coal basins and their tectonic setting; concepts of cyclical deposition in coal basins; origin of splits and partings in coal seams; relationship of modern environments and ancient coal-forming environments; structural problems relevant to exploration and mining of coal; methods of resource evaluation. Three 1-hour lectures/week; five 1/2 day field trips.

482-3 Coal Petrology. Structural features and microscopy of coal seams. Origin and alteration of coal constituents. Includes field trips, study of coal specimens, and techniques. Prerequisite: 220 and 221 or consent of instructor. Elective Pass/Fail.

484-3 Palynology. (Same as Botany 484.) Taxonomy, morphology, stratigraphic distribution, and ecology of fossil pollen, spores, and associated microfossils. Prerequisite: 220, 221, or consent of instructor. Elective Pass/Fail.

500-1 to 2 Teaching for Geology Graduate Students.

510-3 Advanced Sedimentation.

513-2 Advanced Geologic Data Analysis.

516-3 Industrial Rocks and Minerals.

518-3 Clay Mineralogy.

520-3 Igneous Petrology.

521-3 Metamorphic Petrology.

522-3 Sedimentary Petrology — Siliciclastics.

523-3 Sedimentary Petrology — Carbonates.

526-3 Advanced Topics in Applied Paleoecology.

527-3 Micropaleontology.

529-1 to 3 (1 per topic) Advanced Topics in Applied Invertebrate Paleontology.

535-3 Advanced Hydrogeology.

537-3 Applied Seismology.

538-3 Gravity and Magnetics.

542-2 (1, 1) Seminar in Geology.

565-3 Rock Deformation and Structural Systems.

578-3 Fluvial Geomorphology.

579-3 Advanced Geomorphology.
582-1 to 6 (1 to 3 per semester) Advanced Coal Petrology.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Health Care Management

(SEE ADVANCED TECHNICAL STUDIES)

Health Education (Department, Major, Courses)

The Department of Health Education offers two specializations within the health education major and two programs of minimal professional preparation. The two specializations are:

1. Community health. For those planning to conduct health education and health promotion activities in non-classroom settings.
2. Health education in secondary schools. For those planning to teach health education in the secondary schools.

The two minimal professional preparations are:

1. Health education in secondary schools. For those planning to teach or supervise health education in the secondary schools.
2. Driver education. For those planning to teach driver education in Illinois secondary schools.

These specializations in general, constitute minimal preparation for the positions listed. Consequently, all candidates are strongly urged to complete additional work in the field.

Psychomotor and verbal skills are required for students enrolled in Health Education 334 and 434. If questions arise concerning an individual student's ability in these areas, an assessment will be made prior to the end of the first week of the semester to determine whether the individual student possesses the necessary skills to remain in the course. The final decision will be made by the first aid coordinator in the Department of Health Education.

Bachelor of Science Degree, College of Education

HEALTH EDUCATION MAJOR – COMMUNITY HEALTH SPECIALIZATION

General Education Requirements	45
Requirements for Major in Health Education	32-36
Health Education 301, 305, 311, 312, 326, 330, 355, 401, 483, 490, and 491	
Recommended Electives	12-15
Electives	24-31
Total	120

HEALTH EDUCATION MAJOR – HEALTH EDUCATION IN SECONDARY SCHOOLS SPECIALIZATION

General Education Requirements	45
Requirements for Major in Health Education	30
Health Education 301, 305, 312, 313s, 326, 334, 355, 401, 405, and 491	
Professional Education Requirements	25
(See Teacher Education Program, page 66.)	
Electives	20
Total	120

The two minimal professional preparations requirements for Illinois teachers are:

Health Education in Secondary Schools: Health Education 301, 305, 312, 334, 355, 405, and 491

Driver Education: Health Education 302S, 313S, 442S, 443S, 475S, plus three hours of electives from the following: Health Education 323S, 334, 445, 470S, 480S, 481S, 495S

Courses

301-3 Advanced Concepts of Health. Interrelatedness and interdependence of health as a total concept. Concepts of health and health education within the context of an option-expanding world are examined. Emphasizes role of the individual in assuming responsibility for one's own health behavior as well as education for a health-activated citizenry.

302S-3 Driver and Traffic Safety Education — Introduction. A beginning course that deals with the highway transportation system, traffic problems, the driving task, perception and implementation of the driver education classroom program. Observation of the teaching environment is included. Prerequisite: a valid driver's license.

305-3 Principles and Foundations of Health Education. An introductory professional course in the field, designed to implement the evolving concept that health education is both content and process; major concepts for a variety of teaching-learning approaches in school and other community settings are considered; health careers and opportunities in field are described.

310-6 Emergency Medical Technician. Upon successful completion of a national examination, meets the formal requirements and certification for those who want to become an Emergency Medical Technician. The course is concerned with cognitive and practical experiences. Triage, vehicle extrication, emergency room observation, and driving an ambulance experiences conducted outside the normal class meeting times are required. Students will be required to pay a laboratory fee of approximately $25. Prerequisite: restricted to written consent of course coordinator.

311-3 Human Growth and Development. An overview of human development from conception through senescence. Designed for professional personnel who will be concerned with planning health programs for groups representing broad age ranges. Emphasis will be on physical, mental, and social dimensions of growth and development.

312-3 Emotional Health. Concepts of positive emotional development in terms of influence in the classroom and other community settings.

313S-3 Introduction to Safety Education. Introduces the principles and fundamentals of safety education. Concerns safety as a social problem and considers major accident areas, accident causes, liability and analyzes possible solutions to accident problems.

323S-3 Methods and Materials in Safety Education. Learning strategies used in teaching safety for elementary and secondary school levels. Emphasizes selection and design of materials participation and demonstration.

326-3 Evaluation in Health Education. Principles and methods for monitoring the implementation of health education and for assessing its impact. Development and selection of valid and reliable measures. Use of standardized scores and other appropriate statistics. Applications in classroom and community settings.

330-3 Consumer Health. Federal and state legislation affecting consumer health; official watchdog agencies on consumer health; non-official agencies (AMA, CU, etc); health and advertising in health and medicine; cultists' and faddists' effect on consumer health.

334-3 Standard First Aid and Personal Safety. Provides students with first aid knowledge and skill competencies necessary to care for injuries and meet emergencies. The course can lead to certification in American National Red Cross standard first aid and personal safety, cardiopulmonary resuscitation, and standard first aid and personal safety instructor programs.

350-3 Health Education in the Elementary School Curriculum. Acquaints the prospective teacher in the elementary school with fundamental processes, techniques and instructional materials related to health education.

355-3 Introduction to Community Health. Organization and administration in local, state, and national official and non-official health agencies, their purposes and functions, and an overview of methods for meeting community health needs and for solving community health problems.

400-2 to 15 (2 to 3 per part) Health Appraisal of School Children. (a) General assessment. (b) Hearing conservation. (c) Vision training. (d) Spinal screening program. (e) Special topics. Includes the screening, testing, and evaluation for numerous health conditions related to hearing, vision, the cardiovascular system, skin, spine, and such diseases as diabetes, tuberculosis, herpes, and other such ailments. Included will be classroom lectures and presentations, a supervised practicum, and all students will develop a viable program in a particular problem area in a public school program.

401-3 Epidemiological Approaches to Disease Prevention and Control. Principles and

practices in the cause, prevention, and control of diseases in various community settings.
402-3 Death Education. Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed on developing brief, functional curricula and usable, imaginative teaching-learning materials, and on evaluating resource materials for use in educating at various levels of maturity.
405-3 Sex Education. Examines various programs of sex and family life education in schools, recognizing a range of community attitudes.
406-3 A Seminar: The Health Professional and Human Sexuality Issues. Human sexuality issues which must be dealt with by professional health workers including nurses, physicians, patient educators, institutional supervisors, and other administrators are considered in the course and current approaches and solutions for questions raised by these issues are examined.
407-3 Drug Education. Meets requirements of Illinois state law for education concerning drugs including alcohol for grades K-12. Explores motivations behind use and abuse of drugs. Offers experiences in development of curriculum and teaching approaches and material.
410-3 Human Sexuality. Provides detailed in-depth information on such topics as philosophical views of sexual behavior, sex techniques, sex therapy, sexual variations, sexual anatomy and physiology, including the sexual response and changes with age and sexual development in childhood.
411-3 Emergency Medical Technician in the Wilderness. Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Required to help purchase supplies as indicated in class. Prerequisite: 310 or 434.
434-4 Advanced First Aid and Emergency Care. Meets the needs of those in positions where a complexity of first aid emergency care procedures are needed. American National Red Cross and Illinois Heart Association Certification can be obtained. Students may be required to purchase materials not to exceed $15. Consent of instructor required.
440-3 Health Issues in Aging. Students enrolled in the course will be involved in a wide variety of learning activities focusing on health needs of the elderly. The course is designed for students who have a special interest in health implications of aging.
441-3 Women's Health. The course deals with a wide variety of health concerns of American women as consumer in the current health marketplace. Major categories of topics include health products, health services, and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer.
442S-5 Driver and Traffic Safety Education — Practicum. Provides prospective teachers with simulation, range, and on-road teaching experience with beginning drivers. Students may be required to purchase materials not to exceed $15. Prerequisite: 302S.
443S-3 Driver and Traffic Safety Education — Program Administration. Emphasizes administration, reimbursement, scheduling, public relations, planning, and evaluation of driver education programs. Prerequisite: 442S or consent of instructor.
445-2 to 6 (2 to 3, 2 to 3) Contemporary Specialized Laboratory Techniques. Provides teachers and other highway safety personnel with instructional experience in (a) motorcycle safety, (b) emergency evasive and pursuit driving. Prerequisite: 302 or consent of instructor. Maximum of 6 semester hours may be obtained either graduate or undergraduate.
450-3 Health Programs in Elementary Schools. Orientation of teachers to health programs and learning strategies. Designed for elementary education majors.
455-3 Computer Applications in Health Education. Designed for students with little or no previous experience with computers. The course will be applications oriented, with an introduction to the potential uses of computers in the field of health education.
460-3 Health Programs in Secondary Schools. Orientation of teachers to health programs and learning strategies. Designed for secondary education majors. Open to non-health education majors only.
461-1 to 12 Health Education Workshop. A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers.
470S-3 Highway Safety as Related to Alcohol and Other Drugs. Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Prerequisite: advanced standing or consent of instructor.
471-2 Health Education Instructional Designs. Analysis of existing health education curricula with emphasis on student development of instructional designs and modules. Students will prepare, utilize, and critique materials. Prerequisite for student teaching in health education. Prerequisite: 305.

475S-3 Traffic Law Enforcement and Planning. Acquaints safety and driver education teachers and highway safety personnel with purposes of traffic law enforcement and engineering, and methods used to fulfill these purposes. Emphasis is placed upon ways of improving existing services and coordinating efforts of official and non-official agencies concerning traffic problems. Prerequisite: 302S or consent of instructor.
480S-3 Traffic and Driver Education Program Development. Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: 443S or consent of instructor.
481S-3 Traffic and Safety Education — Evaluation Techniques. Emphasizes method of evaluation as applied to traffic and safety education programs. Prerequisite: 480S or consent of instructor.
483-3 Community Health Administration in the United States. Background and development of community health administration structures in the United States; the dynamics and trends evolving from current health and medical care programs and practices.
485-3 International Health. Health beliefs, values, and practices of peoples in various cultures as related to a total way of life of potential value to both prospective teachers and students in other fields.
488-3 Environmental Dimensions of Health Education. Application of the principles of learning to understanding people interacting with their environment. Emphasis placed upon individual and community responsibilities for promoting environmental health. Rural and municipal sanitation programs and practices are included.
489-3 Introduction to Vital Statistics. An introduction to bio-statistics; examination of theories of population projections; collection, organization, interpretation, summarization, and evaluation of data relative to biological happenings with emphasis on graphic presentation.
490-2 to 6 Field Experiences in School, Community Health or Safety Education. Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: consent of instructor.

491-3 Health Teaching/Learning: School and Community. Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education.
495S-3 Driver Education for the Handicapped. Methods and techniques in the use of assistive equipment and program materials for teaching handicapped persons how to drive. Prerequisite: advanced standing or consent of instructor.
496-4 Industrial Hygiene. Provides a background in the recognition, evaluation, and control of toxic materials and hazardous physical agents in the work environment. Prerequisite: consent of instructor.
499-3 Rx: Education in Health Care Settings. Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educational programs. Open to medical and dental personnel, nurses, health educators, dieticians, therapists, pharmacists, social workers, and related professionals.
500-3 Community Organization for Health Education.
510-3 Curriculum in Health Education.
511-3 Health Education Conference Practicum.
515-3 Review of Current Literature in Health Related Fields.
520-3 Special Projects in Health Education.
526-3 Evaluative Approaches to Health Education.
530S-3 Research in Traffic Safety.
533A-4 Foundations of Health Education I.
533B-4 Foundations of Health Education II.
536-3 Professional Preparation in Health Education.
540-2 Health Facilities Management.
541-3 Issues in Health Care.
550S-3 Current Developments in Traffic and Safety Education.
555S-3 Traffic Safety Management.
572-3 Coordination and Supervision of School Health and Safety Programs.
590-8 Practicum in Community Health.
592-8 Practicum in Safety and Industrial Health.
597-2 (1, 1) Seminar in Health Education.
598-3 Institute: Writing Research Proposals.
599-1 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Higher Education (Department, Major [Graduate Only], Courses)

The Department of Higher Education does not offer an undergraduate major or minor but it does offer certain courses for undergraduates who wish to learn about higher education, its history, institutions and organization, and current issues. Undergraduates interested in this area are advised by their regular academic advisers.

Courses

399-4 (2, 2) Problems of Higher Education in the United States. An introduction to the broad understanding of higher education in the United States designed to provide perspective. **(a)** Historical development with an emphasis on such basic concepts as lay control, academic freedom, and institutional response to social needs. **(b)** A problem approach is utilized to develop an understanding of faculty, student, and administration roles in solving problems, with an emphasis upon the instruments of governance in colleges and universities as well as upon the meaning of accountability, control, and support of higher education. This course is open to any interested student. Need not be taken in sequence. Elective Pass/Fail.
402-1 to 3 Principles of Student Personnel Group Work. Acquaints the student with group work possibilities and functions in higher education. Elective Pass/Fail.
431-3 Workshop in Adult and Community Education.
501-2 Introduction to Research in Higher Education.
510-3 Higher Education in the United States.
512-3 Higher Education in Selected Nations.
513-3 Organization and Administration in Higher Education.
515-3 College Student Development: Operations and Policies.
516-3 College Students and College Cultures.
518-3 College Teacher and College Teaching.
521-3 Curriculum Design and Policy.
525-3 Philosophy of Higher Education.
526-3 The Community College.
528-3 Finance in Higher Education.
535-1 to 14 (a-h-1 to 3 each; i-1 to 6) Higher Education Seminar I.
545-1 to 16 (a-g-1 to 3 each; h-1 to 8) Higher Education Seminar II.
550-1 to 4 Higher Education Seminar III.
589-1 to 4 Higher Education Research Seminar.
590-1 to 6 Individual Readings.
591-1 to 6 Individual Study.
592-1 to 6 Special Problems (Individual).
595-1 to 6 Internship in Higher Education.
599-1 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

History (Department, Major, Courses)

A major in history consists of a minimum of thirty-two semester hours of history courses. Students who plan advanced study in preparation for college teaching or other professional work are advised to take added work.

Courses may be chosen from all departmental offerings except for GE-B 105. Pass/Fail grades do not carry credit toward the major or minor in history. A number of different patterns are available for students anticipating various futures. Students should consult with departmental advisers to choose the pattern that fits their needs. The basic regulation is that, for a course to count toward the major, it must be approved in advance by one of the advisers in the department. Normally the department will accept a substantial part of the credits in history taken in other accredited institutions up to a total of 16 hours. In every case, transfer students must have taken at least 16 semester hours in history at Southern Illinois University at Carbondale.

Advisers are available in the Department of History to assist students in planning their programs in accordance with current University and departmental regulations. Normally courses must represent at least two areas of history (United States, European, and Third World) with a minimum of three courses in two areas, or two courses in each of the three areas. Students must also complete a minimum of three courses at the 400 level and they must write a research paper in conjunction with any 400-level history course.

All history majors should meet with the department's undergraduate advisers each semester to keep up to date the records of their progress toward the degree and to receive advance approval of their courses. Transfer students should report to the department prior to their first semester of attendance. A *C* average in the major is required for graduation. A 2.25 average in the major is required before student teaching will be approved by the department.

Students with exceptional scholarly promise may be invited into the departmental honors program which begins with a colloquium and continues with an honors seminar and thesis prepared under the direction of a member of the department. Graduation with departmental honors in history is given to those who successfully complete the program.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements 45
Supplementary College Requirements (See Page 75) ..... (4) + 8-14
Requirements for Major in History ..... 32[1]
Two courses in American history, two courses in European history, and two courses in Third World: Latin American, Asian, and/or African history, or three courses in each of two of the above fields 18-24
History electives 8-14
Electives 29-35
These may include 27 hours in professional education for teacher certification.
Total 120

Bachelor of Science Degree, College of Education

General Education Requirements ..... 45[2]
Requirements for Major in History ..... 32[1]
Eight hours in American history, two courses in European history, and two courses in Third World: Latin American, Asian, and/or African history, or three courses in each of two of the above fields 18-24
History electives 8-14
Professional Education Requirements 27
See Teacher Education Program, page 66.
Curriculum, Instruction, and Media 469 is required.
Electives 16
Total 120

Minor

A minor in history consists of 16 semester hours. The student is advised to balance courses between at least two of the three fields of American, European, or Third World history. Transfer students, in order to have a minor in history, must have taken at least eight semester hours in history at Southern Illinois University at Carbondale.

[1] At least three courses must be taken at the 400 level.
[2] See catalog section titled Curriculum, Instruction, and Media for specific certification requirements in General Education and other areas.

Courses

200-3 Problems in the History of World Civilization. Seminar focusing on selected topics in world history. Prerequisite: University Honors Program status or consent of instructor. Elective Pass/Fail.
205-6 (3, 3) History of Western Civilization. **(a)** From ancient times through the sixteenth century; **(b)** The seventeenth century to the present. A brief survey of the major developments and trends in European history from ancient times through the 20th Century. Elective Pass/Fail.
300-3 The Origins of Modern America, 1492-1877. A general survey of political, social, and economic development of the United States from 1492 to 1877. Elective Pass/Fail.
303-1 to 3 Topics in Comparative History. A comparative study of recurring themes in the history of diverse societies and civilizations. Topics will vary and will be announced in advance. Topics to be covered include the problem of slavery, technology and society, war, and civilization. Elective Pass/Fail.
310-4 Ancient Civilizations. A comparative study of ancient near eastern and classical civilizations of the Fertile Crescent and the Mediterranean Basin: Mesopotamia, Egypt, Palestine, Greece, and Rome. Elective Pass/Fail.
313-4 Great Ideas in History: Ancient Greece to Early Modern Times. An introduction to the ideas and culture of western civilization over a period of two thousand years, from the ancient Greeks to the Reformation. The great ideas in philosophy, religion, political theory, and other literature are stressed, and attention given to related trends in painting, sculpture, architecture and music. Slides of art works are shown and tapes of music are played. Elective Pass/Fail.
315-4 Mediaeval Europe. The emergence of Europe from the Age of Constantine to the Black Death, with emphasis on the political, socio-economic, and cultural forces which were at work creating Europe. Elective Pass/Fail.
320-4 Early Modern Europe. The development of Europe from the 16th Century through the Age of the French Revolution. Elective Pass/Fail.
323-3 History and Artistic Creativity. A selected exploration of the specific conditions in Western history, from the Renaissance to the present, which have encouraged and given direction to creativity in the arts. Elective Pass/Fail.
324-3 Women in European Society: 1600 to Present. The legal, social, economic, and political position of women in European society during the past 350 years are examined against the backdrop of industrialization, political democratization, world wars, and totalitarianism. How women participated in, reacted to, and were affected by this transformation are the major themes of the course. Contemporary writings as well as historical works will be utilized.
325-3 Europe Since 1815. The development of Europe from the Age of the French Revolution to the present day. Elective Pass/Fail.
330-6 (3, 3) English History. **(a)** England to 1688; **(b)** England since 1688. Political, social, economic, and cultural history of England. Elective Pass/Fail.
336-3 Fascist Dictatorships in Contemporary Europe: Italy, Germany and Spain. Mussolini's fascism, Hitler's national socialism, and Franco's falangist authoritarianism in historical context. Prerequisite: sophomore standing or consent of instructor. Elective Pass/Fail.
338-3 Eastern Europe. An historical survey of the East European area from the Baltic to the Balkans, with emphasis on the modern era. Elective Pass/Fail.
339-3 Contemporary Soviet Civilization. Developments in the Soviet Union since World War II, with coverage of similarities and dissimilarities of the U.S. and the USSR, their conflict and cooperation, Discussion of Soviet cultural minorities and the stature of the Soviet Union in the Third World.
350-2 The Revolution and the Constitution. A study of the conflicting forces which produced the American Revolution, led to the creation of the federal union and shaped the early republic. Elective Pass/Fail.
354-3 The United States Since 1945. America enters the atomic age; a study of American society since the end of the Second World War and the role played by the United States in the world. Elective Pass/Fail.
355-2 to 3 The Radical View in American History. A study of American radicalism from the revolution to the present.
362-6 (3, 3) Black American History. (Same as Black American Studies 311.) **(a)** Black American History to 1865; **(b)** Black American History since 1865. The role of Blacks and contribution in the building of America and their ongoing fight for equality.
364-3 The Great Depression in the United States. Causes and effects of the great depression and of governmental measures for relief, recovery, and reform during the years 1929-1942. Elective Pass/Fail.
365-3 History of Social Welfare in America. Discussion of the changing attitudes and problems which Americans have applied to the problems of social welfare from the colonial period to the present. Focuses on the condition of the poor, the attitudes toward the poor,

and the institutions, public and private, which were created to meet the obligations of social welfare. Elective Pass/Fail.

366-2 to 3 American Indian History. A comprehensive history of American Indians from prehistoric times to the present.

367-3 History of Illinois. The history of the state from 1818 to the present.

368-3 Women in American History. Covers the role of women in colonial society, the impetus for an organized women's rights movements in the 19th century and how it related to general reform movements, and gains and setbacks in the industrial-urban society of the 20th century.

369-3 History of the American Family. A survey of the American family from its origins to the present, focusing on the variety of families — English, African, later immigrants, middle class, and poor. During the course students will write their own family histories, thereby applying what they have learned to their own lives.

370-6 (3, 3) History of Latin America. (a) Colonial Latin America. (b) Independent Latin America. An introduction to the political, economic, social, and cultural development of Latin America from Precolumbian times to the present. Elective Pass/Fail.

380-6 (3, 3) History of East and South Asia. (a) China and Japan; (b) India and Southeast Asia. The first semester focuses on China and Japan from early times to the present; the second semester concentrates on India and Southeast Asia in modern times.

385-3 Islamic Civilization. A survey of the development of the Islamic world from Mohammed to the present. Emphasis on continuing themes of Moslem civilization and their effects in the modern world.

387-6 (3, 3) History of Africa. (Same as Black American Studies 314.) (a) History of West Africa. A study of West African peoples from earliest times to the present, including the era of kingdoms, the role of Islam, African-European relations, colonialism, and African nationalism. (b) History of East-Central Africa. From earliest times to the present, including migrations and kingdoms, African-Arab-European relations, colonialism, and African nationalism. Elective Pass/Fail.

390-3 History in Fiction. A comparative study of fictional accounts and of analyses written by historians over selected periods or topics.

393-3 Twentieth Century Military History. An introduction to the problem of armed conflict throughout history with particular emphasis on the twentieth century and the transformation of warfare during the era of the World Wars. Prerequisite: sophomore standing or consent of instructor. Elective Pass/Fail.

395-3 Honors. Great ideas and works of history, with discussion of conflicting interpretations of major historical problems. Prerequisite: junior standing and consent of department.

396-2 to 8 Independent Study in Classics Program. (See Classics 496.)

413-3 European Rural Society, 400-1100 A.D. (See Sociology 413.)

414-3 European Urban Society, 1000-1550 A.D. (See Sociology 414.)

417-4 Cultural History of the Middle Ages. Selected problems in the development of mediaeval culture, the mediaeval universities, and the transmission of ancient ideas to the modern world. Elective Pass/Fail.

418-3 Renaissance. The focus is on the Renaissance in Italy and in particular on its relation to the social and economic context in which it developed. The spread of humanism and humanistic values to other areas of Europe will also be considered. Elective Pass/Fail.

420-3 Reformation. Concentrates on the movement of religious reforms in the 16th Century. Emphasis on its roots in the past, particularly in earlier expressions of popular piety and to the wider social and political effects in the 16th and 17th centuries. Elective Pass/Fail.

421-6 (3, 3) Absolutism and Revolution: Europe 1600-1815. (a) 1600-1715; (b) 1715-1815. The development of enlightened despotism, the rise of the revolutionary movement, and the Napoleonic period. Elective Pass/Fail.

422-6 (3, 3) Intellectual History of Modern Europe. (a) 1600-1815; (b) Since 1815. The first semester will cover the Age of Reason, the Enlightenment, and Early 19th Century Romanticism. The second semester will cover the period from Marx and Darwin to the Contemporary World. Elective Pass/Fail.

423-3 Diplomatic History of Modern Europe. A study of the European state system and the diplomacy of the major powers, with emphasis on events since 1870.

424-6 (3, 3) Social and Revolutionary Movements in Nineteenth Century Europe. (a) 1815-1871; (b) 1871-1914. Changing social and political structure of Europe caused by the impact of industrialization and the French Revolution. The consequences of these developments in terms of the emergence of new social forces and the development of movements for social and political revolution. Elective Pass/Fail.

425-6 (3, 3) Twentieth Century Europe. (a) World War I to World War II; (b) World War II and after. Problems in the political, social and military history of Europe in the 20th Century.

430-3 The British Empire-Commonwealth. The rise of the British Empire and its subsequent development into a commonwealth of self-governing nations.

432-4 History of France. Social, economic, political, and intellectual evolution from mediaeval origins to the present day. French contributions to western culture. Elective Pass/Fail.

433-3 History of Germany. German state and society from the Middle Ages to the present day. Elective Pass/Fail.
434-3 History of Scandinavia. Denmark, Norway, Sweden, Finland, and Iceland. Related history of the Baltic and North Sea regions, from prehistoric times to the present. Elective Pass/Fail.
435-3 History of Modern Italy. Italy in the 19th and 20th centuries. Emphasis is on continuing problems: the tensions between agricultural south and industrial north, Italy's role as a Great Power, and the persistence of centrifugal forces in Italian politics. Elective Pass/Fail.
436-6 (3, 3) History of Spain. (a) To 1700; (b) Since 1700. Institutional, intellectual, socio-economic, and political history from the Middle Ages to the present. Elective Pass/Fail for (b) only.
437-6 (3, 3) History of Russia. (a) Imperial Russia from Peter the Great to the emancipation of the serfs; (b) Russia since emancipation: modernization and revolution. The study of Russian history from Peter the Great to the present. Elective Pass/Fail.
440-3 Tudor-Stuart England. England from 1485 to 1714. The social, economic and political development of Britain during the crucial two centuries from late feudal anarchy to world power.
450-4 American Colonial History. The discovery, settlement, and development of the colonies before the American Revolution.
451-3 Jeffersonian and Jacksonian America, 1789-1850. Origin and development of democratic institutions and the emergence of sectional conflict in the pre-Civil War Era. Elective Pass/Fail.
452-6 (3, 3) United States History 1850-1896. (a) Civil War era; (b) the origins of modern America; reconstruction and nationalization; 1865-1896. The study of the background to the Civil War, the Civil War, Reconstruction, and the Gilded Age.
453-6 (3, 3) Twentieth Century American History. (a) 1896-1921; (b) 1921-1945. The history of the United States since the 1890's with emphasis upon politics, political ideas and diplomacy.
460-6 (3, 3) Social and Intellectual History of the United States. (a) To 1860; (b) since 1860. The development of American society and a study of the various types of economic, social, and political thought that have influenced it.
461-6 (3, 3) Constitutional History of the United States. (a) To 1877; (b) from 1877. Origin and development of the American Constitution from the English background to the present time. Stress is placed on the political, social, and economic forces which influenced the American constitutional system. Elective Pass/Fail.
463-6 (3, 3) History of American Diplomacy. (a) To 1914; (b) Since 1914. General consideration of American foreign policy and the emergence of the United States as world power. Elective Pass/Fail.
464-6 (3, 3) American Economic History. (a) To 1869; (b) Since 1869. The growth of the American economy from the colonial period to the present. Emphasis is placed on the historical forces which influenced the American economic system.
465-6 (3, 3) History of the South. (a) The Old South; (b) The New South. Social, economic, political, and cultural developments of the South.
466-6 (3, 3) History of the American West. (a) Trans-Appalachian Frontier; (b) Trans-Mississippi Frontier. The American frontier and its impact on American society from the colonial period to the 20th century.
470-3 Colonial Latin America: Policies and Practices. Theory and operation of the Spanish and Portuguese colonial systems in the New World. Elective Pass/Fail.
471-6 (3, 3) History of Mexico. (a) 19th Century; (b) Revolutionary Mexico. Significant political, economic, diplomatic, social, and cultural aspects of Mexican life from independence to the present time with emphasis upon the Mexican Revolutions. Elective Pass/Fail.
472-3 The Caribbean Area. A history of the Caribbean from Columbus to Castro. Elective Pass/Fail.
473-3 Argentina and Chile. A narrative and comparative history of these two leading Latin American nations with emphasis on the period since independence. Elective Pass/Fail.
474-3 Andean South America. The political, economic, social and cultural development of the Andean nations from pre-Columbian times to the present. Elective Pass/Fail.
476-3 Dictatorships in Latin America. A political, economic, social and military study of the domestic and international aspects of dictatorship. Elective Pass/Fail.
480-6 (3, 3) History of Chinese Civilization. (a) Traditional China; (b) Modern China. The first semester provides a full coverage of traditional China and emphasis on classical philosophies, religions, historical writings, literature, arts and science. The second semester deals with the transformation of China into the modern ages. Elective Pass/Fail.
484-3 History of Inner-Asian Relations. Tribes, migrations, wars, and power politics in Central Asia and outlying areas of China from Han times through 19th century rivalries to latest developments along the Sino-Soviet frontier. Elective Pass/Fail.
485-3 History of the Middle East. A study of the Middle East from the 7th through the

16th centuries concentrating on the following major themes: the development of Islamic civilization, the mediaeval Muslim world, the disintegration of the Arab caliphate, the rise of the Ottoman Turks, and the development of the Ottoman Empire.
490-1 to 4 Special Readings in History. Supervised readings for students with sufficient background. Prerequisite: registration by special permission only.
491-3 Historiography. Writings of historians from Herodotus to Toynbee. Elective Pass/Fail.
492-4 Historical Research and Writing. Methods of historical investigation, criticism and composition. Open not only to history majors but with permission of instructor to those in other disciplines interested in history as a research tool.
493-1 to 6 Problems in History. Topics vary with instructor. May be repeated for a maximum of six semester hours provided registrations cover different topics. Topics announced in advance.
494-3 Quantitative Research in History. An introduction to the application of quantitative data and social science methods to historical research.
495-4 History Honors. Principles of historical method, research, and writing for senior honor students only. Not for graduate credit. Prerequisite: consent of department.
496-1 to 12 Internship in History. Supervised field work in public or private agencies or operation where history majors are frequently employed, such as archives and libraries, government offices, communications media, historic sites, and museums. Only three hours may be applied to the major and nine hours toward graduate work. Prerequisite: consent of department.
497-3 Historical Museums, Sites, Restorations and Archives. The historical development of the museum from the Academy, the Lyceum, and the Great Museum of Alexandria. Discussion of the museums that have developed in the last three centuries with emphasis on the United States will include historical sites such as battlefields, forts, historic buildings, restorations, historical monuments, and major archives. Field trips to some of these sites form part of the course.
498-3 Problems of the History Museum. Examines the general background and function of the museum in its contemporary setting with special emphasis on tasks of the individual who wishes to work in a historical museum or in an interpretative center. Given in cooperation with the University Museum. Prerequisite: consent of instructor.
515-3 to 6 (3, 3) Studies in Mediaeval and Renaissance History.
516-4 to 8 (4, 4) Seminar in Mediaeval and Renaissance History.
520-3 to 6 (3, 3) Studies in Early Modern European History.
521-4 to 8 (4, 4) Seminar in Early Modern European History.
522-3 to 6 (3, 3) Studies in Modern European History.
523-4 to 8 (4, 4) Seminar in Modern European History.
530-4 Seminar in English History.
550-4 Seminar in American Colonial History.
551-4 The Age of Jefferson.
552-4 Reform Movements in the Pre-Civil War Period.
553-4 Seminar in Twentieth Century United States History.
554-4 New Viewpoints in American History.
555-4 to 8 (4, 4) Seminar in American History.
561-4 Seminar in American Constitutional History.
566-4 Seminar in American Frontier History.
567-4 Seminar in Illinois History.
570-4 to 8 (4, 4) Seminar in Latin American History.
580-4 Seminar in Modern China.
590-1 to 8 (1 to 3 per semester) Readings in History.
591-2 to 5 Independent Investigation.
593-4 Seminar in Contemporary History.
599-1 to 6 Thesis.
600-1 to 30 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Home Economics Education

(SEE VOCATIONAL EDUCATION STUDIES)

Human Resources (College, Courses)

Courses

201-3 Introduction to Human Services Management. Provides an introduction to the

administration and management of human services organizations. Examines the direction/supervision of non-profit human services.

258-1 to 30 Work Experience Credit. Credit for work experience relevant to the particular departmental programs: prior to entrance into the University; work experience incorporated into instructional programs through internship; cooperative work experience programs between the department and the Office of Student Work and Financial Assistance. Credit hours to be granted to be determined by the division director.

259-1 to 24 Occupational Education Credit. Credit for educational experiences in technical schools and institutes, junior college technical and occupational programs and employee training relevant to the particular departmental programs. Credit hours granted to be determined by the division director.

301-3 Human Services Program Management. Provides a multi-disciplinary approach to cases/problems in human services administration/management.

305-1 to 4 College of Human Resources Honors Seminar. Readings and group discussions in areas of current interest. Prerequisite: junior standing, GPA of 3.0 overall.

387-1 to 6 College of Human Resources Special Problems-Honors. Directed study in specialized problems associated with human resources. Prerequisite: junior standing. GPA of 3.0 overall.

Industrial Technology (Major, Courses)

The industrial technology major has as its objective the training of qualified personnel who can develop and direct the manufacture and distribution of products.

The program is a balanced curriculum of studies drawn from a variety of disciplines relating to industry. Included in the curriculum is the study of materials and manufacturing processes, principles of distribution, and concepts of industrial management and human relations. Communication skills, humanities, and social sciences are studied to develop overall abilities. Knowledge of physical sciences, mathematics, design, and technical skills gained from the program allow the graduate to cope with technical and production problems.

The industrial technology curriculum is flexible enough to provide the means whereby graduates of two-year occupational programs may obtain a Bachelor of Science degree within two years. A graduate of a two-year industrially-oriented occupational program, such as aviation, architecture, automotive, construction, drafting, data processing, electrical, machine tool, mechanical, mid-management, mining supervision, and welding may have an excellent preparation to pursue a Bachelor of Science degree with a major in industrial technology.

Students with work related experience may receive credit toward the degree via Industrial Technology 258.

Additional flexibility in earning credit toward the degree is provided through off-campus courses and cooperative work experience. Cooperative work experience is available to students who qualify with provision that meaningful employment is available in the participating industries.

Off-campus courses for students in the industrial technology program are offered in geographical locations with a high population density whenever it is apparent that there is a need and potential enrollment to justify scheduling a class, it is possible to obtain a faculty member to teach the class, and adequate laboratory and library facilities are available.

A capstone option may be available in the industrial technology major. The option is explained in Chapter 3 of this bulletin. The program is available to students holding associate degrees of at least 60 semester hours in non-baccalaureate-oriented programs or equivalent certification with a minimum grade point average of 2.25. For the industrial technology major, the associate degree or equivalent certification should be in an industry-related field. This option permits qualified students to fulfill their degree requirements by completing 60 semester hours of work approved by the capstone adviser. Each individual's program of study may differ according to the previous academic work, industrial experience, and future career plans.

The industrial technology program is accredited by the National Association of Industrial Technology.

Bachelor of Science Degree, College of Engineering and Technology

INDUSTRIAL TECHNOLOGY MAJOR

General Education Requirements	45
Requirements for Major in Industrial Technology	75
Physics 203a, b; 253a,b	(6) + 2
GE-D 118	(2)
Mathematics 111	(3) + 2
Engineering 222	2
Psychology 320 or Administrative Sciences 301 or Administrative Sciences 385	3
Engineering Technology 103, 104, 244, 245a	12
Industrial Technology 208, 209, 307, 340, 358, 365, 375, 382, 390, 425, 440, 465	36
Technical electives	18
Groups of electives selected from the areas of manufacturing, technical sales, supervision, industrial design, industrial safety, and other technical fields.	
Total	120

INDUSTRIAL TECHNOLOGY MAJOR – OCCUPATIONAL ALTERNATIVE SPECIALIZATION

For students from two-year industry-related occupational programs in a community college or technical institute. Also, students with related work experience may receive credit and qualify for this alternative.

General Education Requirements	45
Requirements for Major in Industrial Technology	75
Physics 203a, b; 253a,b	(6) + 2
GE-D 118	(2)
Mathematics 111	(3) + 2
Engineering 222 or Industrial Technology 270	2-3
Industrial Technology 105, 208, 307, 340, 358, 365, 375, 382, 390, 440, 465	33
Technical electives	35-36
Total	120

INDUSTRIAL TECHNOLOGY MAJOR – MINING TECHNOLOGY SPECIALIZATION

The course requirements for the mining technology specialization are specifically planned to complement the mining technology background of the community college or technical institute associate degree graduate.

In preparing the subject matter for the mining courses every effort has been made to include topics proposed by local mining companies. The main thrust of the overall program is directed toward increased coal production.

Topics included in the course work center around mining methods, mine management studies, quality control, production control, government regulations, safety, productivity-increase methods, current mining problems, mine surveying, geology, mathematics, social sciences, humanities, English composition, technical writing and the physical sciences.

General Education Requirements	45

Requirements for Major in Industrial Technology		75
Geology 220	(3)	
Physics 203a, b; 253a,b	(6) + 2	
GE-D 118	(2)	
Mathematics 111	(3) + 2	
Engineering 222		2
Industrial Technology 105, 307, 320, 330, 360, 365, 375, 382, 420, 439, 441, 460		34
Technical electives		35
Total		120

Courses

Safety glasses, a suitable calculator, and textbooks are required for most of the following courses.

105-3 Technical Sketching. Basic principles of technical sketching including freehand sketching techniques, lettering, orthographic projection, pictoral sketching, auxiliary views, sectional views, dimensioning, tolerancing, fasteners, working drawing interpretation, and computer-aided drafting.

208-3 Fundamentals of Manufacturing Processes. Introduction to the basic processes, equipment, and material used in manufacturing. Includes plastics, metal removal, materials joining, casting, and some of the newer processes.

209-3 Manufacturing Process Laboratory. Laboratory experiments to familiarize the student with the theory and operation of manufacturing processes. Laboratory. Prerequisite: 208.

240-3 First-Line Supervision. Analysis of problems of first-line supervisors. Topics include leadership, motivation, communication, grievances, training, discipline, and group and individual effectiveness, and labor relations.

258-2 to 30 Work Experience Credit. Credit granted for past work experience while employed in fields related to the student's educational objective. Credit is established by departmental evaluation.

259-2 to 60 Occupational Credit. For occupational credit earned at junior colleges and technical institutes. Credit is established by departmental evaluation.

270-3 Computational Methods for Industrial Technologists. Introduces the student to a problem-oriented computer language that is used to solve relevant problems that occur in industry.

307-3 Applied Calculus for Technology. Applying mathematical techniques to technology problems, including the analysis, formulation, and problem solutions. Techniques of differentiation, max-min problems, and elementary techniques of integration. Prerequisite: Mathematics 111 or equivalent.

319-2 to 30 Industrial Internship. Industrial experience includes job skills, manufacturing processes, technical information, and labor-management relationships with supervised instruction, conferences, and examinations. Prerequisite: consent of instructor.

320-3 Surface Mining Operations. The elements of surface mining, methods and equipment, surface mine terminology, pit development, and equipment selection. Field trips. Prerequisite: appropriate background.

321-3 Underground Mining. Study of terminology, mining methods, equipment selection, ventilation, haulage, coal handling, and safety parameters associated with underground coal extraction technology.

330-1 Current Mining Problems. Guest lecturers provide timely information on current mining technology problems. Special investigations of mining techniques. Emphasis on state and federal regulations.

340-3 Computer-Aided Manufacturing. Introduction to the use of computers in the manufacture of products. Includes the study of direct and computer numerical control, part processing, and industrial robots. Prerequisite: 208, computer programming or consent of instructor.

341-3 Maintenance. Principles and practices of maintenance department organization, preventative procedures, and typical equipment problems. Also, includes related topics such as plant protection, custodial services, and maintenance of power plants.

351-3 Industrial Metrology. Methods and equipment of industrial measurement and inspection. Includes 3-D measuring machines, lasers, and non-destructive testing.

358-3 Materials Handling and Plant Layout. Methods and equipment of materials handling.

Plant layout techniques. Students are assigned a plant layout project. Prerequisite: 382 or Administrative Science 318, or consent of instructor.
360-3 Mine Production and Inventory Control. Study of mine production and inventory control through the exploration, development, and production phases. Includes topics in planning, process control equipment, scheduling, inventory control, and cost analysis.
362-3 Industrial Packaging. Analysis of packing principles, equipment, and processes such as paper, glass, metal containers, and plastics.
365-3 Quality Control. Analysis of control charts, acceptance sampling procedures, inspection systems, reliability and quality experiments.
375-3 Production and Inventory Control. Production and inventory control systems. Includes topics in forecasting, master production scheduling, material requirements planning, capacity requirements planning, inventory management, production activity control, and applicable operations research techniques.
382-3 Motion and Time Study. Principles and practices of motion and time study including process charts, operation charts, motion summary, and time standards.
385-3 Purchasing. Provides a comprehensive knowledge of modern procurement practices and policies. It combines analysis of the fundamental purchasing principles with analytical descriptions of the latest developments and techniques.
390-3 Cost Estimating. (Same as Engineering Technology 390.) Study of the techniques of cost estimation for products, processes, equipment, projects, and systems. Prerequisite: Mathematics 111.
395-3 Technology Design. An elective project on a technical subject selected by the student with advice from the instructor. Stimulates original thought and creativity. Prerequisite: consent of instructor.
410-3 Mining Reclamation. Study of reclamation techniques associated with underground and surface coal mining. Emphasis is placed on the integration and cost trade-offs associated with coal extraction and reclamation as well as federal, state, and local regulations. Prerequisite: consent of instructor.
420-3 Coal Preparation and Analysis. Study of coal preparation and blending in association with coal analysis. Design and operation of preparation plants including water management, waste management, coal storage, loading, and transportation.
425-3 Advanced Process Design and Control. Extension of other process courses offered. Meets the need of those students who enter the field of manufacturing by giving more emphasis on planning, estimating, and control of industrial processes. Laboratory. Prerequisite: 309, 310.
439-3 Bulk Materials Handling. Study of the various types of equipment used in the mining industry. Estimation of costs and output of equipment used for excavating and transporting earth materials. Prerequisite: appropriate background.
440-3 Manufacturing Policy. Review of all areas covered by the industrial technology program. Includes problems for solution which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Prerequisite: 358, 365, 375, 382, or consent of instructor.
441-3 Mine-Safety Technology. An in-depth study of the technological implications of the Federal Coal Mine Health and Safety Act. Emphasis is placed on the technology required to operate safely underground coal mines. Prerequisite: appropriate background.
450-3 Industrial Systems Analysis. Teaches the systems required for successful industrial operations. The role of the computer in system design and application is emphasized.
455-3 Industrial Robotics. Study of industrial robots and their applications; pendant and numerical programming of robots. Robotics design including tactile and visual sensors. Technical and psychological problems of justification, installation, and management of robotic systems. Prerequisite: 340.
460-3 Mining Technology. A capstone course to include all aspects of coal mining. Group projects are assigned on the design and development of a mine with emphasis on cost, productivity, yield, equipment, and staffing. Prerequisite: 320, 321, 420, or consent of instructor.
465-3 Industrial Safety. Principles of industrial accident prevention; accident statistics and costs; appraising safety performance; recognizing industrial hazards and recommending safeguards. Includes a study of the Occupational Safety and Health Act and the Coal Mine Health and Safety Act. Prerequisite: senior standing.
466-3 Occupational Safety and Health Standards. Covers the standards, inspection procedures, and compliance requirements covered in the latest revisions of the Occupational Safety and Health Act of 1970. Emphasis is placed on developing the student's ability to detect violations of the standards and recommend corrective safety actions.
492-1 to 6 Special Problems in Industry. Special opportunity for students to obtain assistance and guidance in the investigation and solution of selected industrial problems. Not for graduate credit. Prerequisite: consent of instructor.
494-1 to 12 (A-L-1 hour each) Applied Project. Selected applied project. Requires the students to apply knowledge learned in various courses to the solution of industrial problems. **(a)** Motion and time study, **(b)** cost estimating, **(c)** materials handling and plant

layout, (d) production and inventory control, (e) quality control, (f) manufacturing policy, (g) industrial systems analysis, (h) fundamentals of industrials processes, (i) industrial safety, (j) analytical problems in technology, (k) computer-aided manufacturing, (l) industrial metrology. Not for graduate credit. Prerequisite: consent of instructor.

Interior Design (Major, Courses)

The interior design program is a part of the Division of Graphic Communication, School of Technical Careers.

The interior design curriculum is planned to assist students in preparing to serve the interior design and architectural professions in the areas of public building, commercial, and residential planning. This includes spatial concepts, interior systems, office landscape, traffic and communication, and human factors. An in-depth understanding of the relevancy of the curriculum to the profession is given the students through lectures and critiques by visiting interior designers, architects, and adjunct professors.

Employment opportunities exist in interior design studios and architectural firms; in major corporations as in-house planners and designers and in various retail organizations and furnishing manufacturers.

The Interior Design program is accredited by the Foundation for Interior Design Education Research.

The program provides the faculty, studios, and as many other facilities as possible, but all other costs including supplies, equipment, and required field trips that are necessary to the successful completion of the program are borne by the student. Interior design education is relatively expensive, and because of the individual nature of the creative laboratory work, it is impossible to predict the exact cost for each student. A reasonable estimate of initial cost would be $250 for equipment, supplies, and books. Much of this equipment is non-expendable but there will be additional supply costs for other courses in the program.

Bachelor of Science Degree, College of Human Resources

General Education Requirements		45
GE-C 205 required; Art 207 must be taken as approved substitute in GE-C		
Requirements for Major in Interior Design		75
GE-C 205	(3)	
Art 120, 207	(3)+3	
School of Technical Careers 215a, b		6
Vocational Education Studies 335		2
Interior Design 111, 112, 142, 221, 222, 234, 242, 262, 334, 351, 383, 384, 391, 392, 406, 462, 471, 493, 495 496		61
Professional Elective		3
Electives		6
Total		120

[1]GE-C 205 also meets a requirement in General Education.

Courses

111-3 Elements of Interior Design. Introduction to the elements of design: line, form, light, color, and textures through the application of purposeful experiments in 2D/3D relationships of form and space and the interrelationships of color and texture as revealed by light. Lecture and studio. To be taken concurrently with Art 110 and School of Technical Careers 215a.

112-3 Principles of Interior Design. Introduction to the principles of design: balance, rhythm, unity, emphasis, and scale/proportion through the perspective of historical and current examples in various design areas. Lecture. Prerequisite: 111 or consent of coordinator.
142-3 Architectural Detailing. Study of construction methods and materials of buildings and standard graphic methods of communication of this information from the point of view of how things go together. Focus is on wood frame construction. Lecture and studio. Prerequisite: School of Technical Careers 215a or consent of coordinator.
221-2 Sketching Concepts. The exploration of freehand drawing as a means to communicate concepts and ideas through experimentation with pen and ink, marker, and colored pencils. Lecture and studio. Design 200 may be taken as a substitute with the consent of the coordinator. Prerequisite: 112, Art 110, GE-C 205, or consent of coordinator.
222-3 Interior Design Presentation. Methods, materials, and media are explored to find the most satisfactory way to present interior designs to clients. Lecture and studio. Prerequisite: 221 and School of Technical Careers 215b or consent of coordinator.
232-2 Electronic Technology. Survey of the current electronic technology either for which or with which interior design is executed. Lecture. Prerequisite: 142, Computer Science 202, or consent of coordinator.
234-2 Materials and Finishes. A study of materials and finishes other than those of a structural nature, including production methods, limitations, quality control, application and uses. Lecture. Prerequisite: to be taken concurrently with 242 or consent of coordinator.
242-3 Interior Architectural Detailing. Study of methods and materials of interior construction and graphic methods of communication of this information from the point of view of how things go together. Focus is on commercial and contract interiors. Lecture and studio. Prerequisite: 142 or consent of coordinator.
262-2 History of Interior Design I. Summary of interiors, their furnishings, and buildings from antiquity to the 19th Century from the point of view of socio-economic, psychological, and philosophical rationales. Lecture. Prerequisite: Art 207 or consent of coordinator.
331-3 Textile Design. Study of textile design and hand printing methods in textile production including block print, silk screen, batik, and tie dye. Simple weaving techniques. Lecture and laboratory. Prerequisite: 131, or 231, or consent of instructor. Elective Pass/Fail.
334-2 Interior Architectural Systems. Study of interior architectural mechanical equipment as it relates to the proximate environment. Emphasis is on heating, cooling, plumbing, and electrical systems with the attendant governing building codes. Lecture. Prerequisite: 242.
351-3 Interior Design Programming I. Methods for data gathering and analysis of project information from preliminary design stage. Lecture and studio. Prerequisite: junior standing with interior design major or consent of coordinator.
363-2 History of Interior Design II. Survey of interiors, their furnishings and buildings from the 19th century to the present from the point of view of socio-economic, psychological, and philosophical rationales. Lecture. Prerequisite: 262 or consent of coordinator.
371-1-6 Professional Internship. Supervised internship in interior design providing professional development of the intern through actual working conditions. Prerequisite: interior design majors within four semesters of graduation and consent of coordinator. Mandatory Pass/Fail.
383-3 Furniture Design and Fabrication. Study of furniture through evaluation, shop drawings, and actual construction. Issues include ergonomics, quality of materials, and methods of construction. Lecture and studio. Prerequisite: 234, 242, Vocational Education Studies 335, or consent of coordinator.
384-2 Lighting Design. Study of lighting as a major tool in designing interior spaces through actual problem solving. Emphasis is on task, ambient, and speciality lighting. Lecture and studio. Prerequisite: 222 and 242.
391-4 Interior Design I. Interior design of the personal environment at the individual level where client/owner and client/user are synonymous. Lecture and studio. Prerequisite: 222, 234, 242, or consent of coordinator.
392-4 Interior Design II. Interior design of the environment at the group level when client/owner and client/user are different. Emphasis is on public access spaces: e.g., restaurants, stores, museums. Lecture and studio. Prerequisite: 383, 391, or consent of coordinator.
406-3 Portfolio and Resume. An investigation and implementation of planning, production, and management of interface information such as resume and presentation of self and portfolio. Not for graduate credit. Prerequisite: senior standing or consent of coordinator.
462-3 Interior Design Seminar. Study of the current state-of-the-art of interior design. Seminar. Not for graduate credit. Prerequisite: senior standing or consent of coordinator.
471-3 Professional Practice in Interior Design. Business principles of the practice of interior design including office systems, forms, and logistics of money and materials. Lecture and seminar. Not for graduate credit. Prerequisite: senior standing or consent of coordinator.
493-5 Interior Design III. Interior design of the environment at the corporate or institutional level where client/owner and client/user are significantly different. Emphasis is on

furniture systems, particularly in the area of office planning. Lecture and studio. Not for graduate credit. Prerequisite: 383 and 392 or consent of coordinator.
495-1 Interior Design Programming II. Preliminary stage of senior design synthesis project, includes project discovery, data gathering, and analysis. Not for graduate credit. Prerequisite: 351 and 392.
496-5 Interior Design IV. Self-initiated interior design project of large scale, complex nature. Emphasis is on synthesizing all learning to date. Lecture and tutorial. Not for graduate credit. Prerequisite: 493 and 495.

Journalism (School, Major, Courses)

The School of Journalism prepares academically sound, technically proficient, and professionally responsible graduates for a wide range of mass communication careers. Depending on level and direction of studies, career tracks include: news-editorial and advertising work with newspapers, magazines, and other print and electronic news media; community and suburban journalism; creative and administrative advertising agency positions; public relations and public information; media management; photojournalism; and research. The journalism major also provides well-balanced preparation for graduate studies in mass communication, public affairs, the social sciences, and law.

The School of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communication, the agency formally recognized by the Council on Postsecondary Accreditation and the U.S. Office of Education. The news-editorial specialization also holds Accrediting Council on Education in Journalism and Mass Communication sequence accreditation.

Early in the junior year the student must decide upon one of the specializations described below or obtain approval of a faculty sponsor and the school's director for another coherent combination of courses tailored to individual interest from the general requirements of the School of Journalism.

Bachelor of Science Degree, College of Communications and Fine Arts

The academic requirements for the Bachelor of Science degree in journalism include 30 to 36 hours in journalism as approved by the School of Journalism and 26 to 30 hours in junior-senior level course work in the College of Liberal Arts, the College of Science, or other areas approved by the faculty.

Students will also complete a 15-hour minor in an area approved by the School of Journalism. The minor must be declared by the time the student has accrued 90 semester hours. Students who select a minor within the College of Liberal Arts may include those hours in their 26-30 senior level hours.

While most students are best served by one of the following specializations, other programs of study in the major may be designed to meet special needs. Individualized programs might address such student interests as mass media management, agricultural journalism, international communication, mass media institutions, and communication research. Such a specialized program of study must be sponsored by a journalism faculty member and approved by the director. Supervised readings in journalism and related courses in other departments may be required. Journalism courses are chosen from the general requirements for the major: survey of mass communication (300); one basic writing course (309 or 310); two intermediate skills courses (311 or 370 and 312, 413, or 372); two advanced skills courses (360, 374, 390, 391, 411, 413, 461, 462, 476); two 400-level non-skills courses (400, 401, 405, 442, 450, 451, 452, 479); and journalism electives to complete 30-36 hours in the major.

ADVERTISING SPECIALIZATION

Students in the advertising specialization develop abilities to analyze problems and identify the roles advertising and other communications can plan in solving

them; develop tools for planning and executing advertising campaigns; and develop applied skills in verbal and visual communication. This program helps prepare students to enter a wide variety of positions with advertising agencies, in the communications media, and related fields.

NEWS-EDITORIAL SPECIALIZATION

Students in the news-editorial specialization receive realistic training in the theory and practice of identifying, gathering, processing, and interpreting information for the mass media. Areas of study include:

Newspaper: reporting, writing, editing, and management for daily, weekly, and suburban newspapers and news agencies; and news-related fields.

Magazines: writing, editing, and managing general and specialized magazines and similar publications.

Public affairs: news skills and values applied to relationships between mass media and information sources in government, business, and other institutions. Techniques, problems, and responsibilities of public information are studied.

Prospective news-editorial specialization students should consult the undergraduate journalism adviser concerning specific courses for this specialization.

PHOTOJOURNALISM SPECIALIZATION

The photojournalism specialization is administered jointly by the School of Journalism and the Department of Cinema and Photography. Students prepare to become photographer-reporters and photo editors and to work in related positions in the mass media.

General Education Requirements 45
Requirements for a Major in Journalism 30-36
Journalism 300 3
Specialization Requirements 27-33
Advertising Specialization: 309, 370, 372, 374, 405, 476, 479, plus journalism electives to bring total to 27-33.
News-Editorial Specialization: 310, 311, 312, 442: two of 390, 391, or 462; one of 400, 401, 405, 450, 451, 452, 479, plus journalism electives to bring total to 27-33.
Photojournalism Specialization: 310, 311, 313, 413: Cinema and Photography 407 and 408: one of 360, 391, 411: two of 400, 401, 405, 442, 450, 451, 452, 479, plus journalism electives to bring total to 33.
Minor 15
Approved non-journalism electives (Must include Marketing 304 for Advertising Specialization) 26-30

Total 120

Other Requirements

Journalism students must demonstrate typing ability of 30 words per minute by receiving a passing grade in a typing course or on an examination given by the School of Journalism before registering for Journalism 309 or 310. Those who cannot meet this requirement must enroll in a typing course and receive a grade of *C* or better.

Students must pass a language skills examination before proceeding to Journalism 311 or 374.

A journalism major may enroll in a journalism course only after receiving a grade of *C* or better in any prerequisite course.

Fees will be assessed for supplies and materials in some courses. Students should inquire about amounts before registering.

Subject to the approval of the school's director, undergraduate students may receive as much as nine hours of journalism credit toward their degrees for courses not taken in residence.

Minor

A total of 15 hours of journalism courses constitutes a minor for nonjournalism majors.

Courses

300-3 Mass Media in Modern Society. Develops an awareness of the pervasive nature of the mass media in our society and an understanding of how the media operate, with emphasis on contemporary social and economic problems in the media.
309-3 Advertising Copywriting. Study and application of the principles of writing the verbal elements of advertising messages. Types of advertising include the following: retail, fashion, mail-order, catalog, direct-mail, trade and industrial, and outdoor. Students learn to write for both print and broadcast media.
310-3 Writing for the Mass Media. Study in the fundamentals of news writing, the techniques of news gathering and reporting, and the principles of editing with experience in the gathering, writing, rewriting, and editing of news copy. Prerequisite: typing speed of at least 30 words per minute.
311-3 Reporting and News Writing. Purposes and effects of different orientations to the information gathering and news writing processes; information sources, interviewing, writing, and editing practices; laboratory in reporting, writing, and editing for the news media. Prerequisite: 310 and satisfactory score on language skills examination.
312-3 Editing and Makeup. Principles of editing are combined with graphic concepts and techniques which interrelate printing processes, photography, writing of cutlines, picture page preparation, and page makeup, copyfitting, head schedules, newspaper organization, and the work flow on the ad and editorial sides. Prerequisite: 311.
313-3 Introduction to Photojournalism. Fundamentals of publications photography. Includes basic camera technique, black and white film and print processing methods, selection and display of photographs, and evaluation of pictorial communication effects. Student supplies own photographic materials and, where possible, an adjustable camera. Prerequisite: consent of department. Open only to journalism majors. Students are responsible for purchase of supplies.
315-3 Graphic Communication. History of printing and typographic development, modern reproduction processes, technological developments, selection and use of appropriate graphic images in communication, and production techniques for publications. Students are responsible for purchase of supplies.
340-3 Publicity Methods. Guidance and practice in writing for newspapers, magazines, and broadcast media about students' fields of specialization. Includes practical work as publicist for university and community groups. Non-majors only. Closed to students who have passed 310 or Radio-Television 310.
341-3 Public Relations. Current methods of planning and executing public relations policies, evaluating the media, and preparing campaigns. Promotional tools and press relations.
350-3 Community-Suburban Journalism. The small newspaper recognized as a distinct medium, performing a specialized function for its readers. Equal weight given to the problem of news presentation and to leadership with careful examination of news and editorial policies of representative newspapers. Prerequisite: 311.
351-3 Community Newspaper Management. Organization, operation, and policy of the revenue departments of the community and suburban weekly and small daily newspapers with special attention to the circulation procedures, retail, general and classified advertising problems, and other phases of management. Prerequisite: 350.
360-3 Magazine Production and Design. The editorial and production functions of the magazine. Application of the principles of article and art layout to total editorial content. Printing production and selection of materials.
370-3 Principles of Advertising. An introduction to the processes of advertising and their functions in a marketing-communications environment; includes research, media, and message elements of advertising campaigns, governmental regulations, and social and economic considerations.
372-3 Advertising Media and Management. Analysis of economic, social, and marketing factors and their use in developing advertising objectives and strategies. Examination of mass media systems as vehicles of advertising communication and the planning, buying, and scheduling of advertising media programs. Prerequisite: 370, Marketing 304.
374-3 Creating Advertising Messages. Examination and practice in the development of advertising message strategies and the writing and design of advertising messages for television, radio, newspaper, magazine, outdoor, direct mail, etc. Students are responsible

for purchase of supplies. Prerequisite: 309, 370, and satisfactory score on language skills examination.

390-3 Critical and Persuasive Writing. The roles and responsibilities of the editor, editorial writer, and opinion columnist with emphasis upon editorial writing and critical thinking. Editorial problems, methods, policies, style, and the fundamentals of persuasion and attitude change form the basis for study. Prerequisite: 311.

391-3 Feature Writing. Identification, research, and application of creative writing techniques with emphasis on newspaper articles. Analysis of reader appeal; study of feature story structure; development of style by practice in writing feature stories. Prerequisite: 311.

392-3 Reporting for Electronic Media. Researching, writing, and producing local news and public affairs presentation for CATV systems. Prerequisite: 310.

400-3 History of Journalism. Development of American newspapers, magazines and radio-television with emphasis on cultural, technological, and economic backgrounds of press development. Current press structures and policies will be placed in historical perspective.

401-3 International Communication. An analysis of the development, structure, functions, and current status of media systems in other countries. Emphasis given to studying factors that facilitate or restrict the flow of intranational and international communication.

405-3 Introduction to Mass Communication Research. Overview of communication research methods including practical training in interpretation and presentation of social science data. Introduction to survey research methods, experimental design, and use of computers for analysis of data. Presentation of data in journalistic forms and social science reports. Prerequisite: 310 or equivalent or consent of instructor.

411-3 Public Affairs Reporting. Covering government and other public agencies, including the city hall, courts, county offices, business, finance, agriculture, labor, and other specialized beats. Prerequisite: 311.

413-3 Picture Editing. Introduction to the need for and function of picture editors for newspapers and magazines. Practical experience in picture selection, cropping, sizing, caption writing, and layout design. Legal and ethical considerations. Assignment procedures for photographers and other illustrators. Library systems for negatives, prints, and other illustrations. Prerequisite: senior standing.

442-3 The Law of Journalism. Legal limitations and privileges affecting the mass media to include the law of libel, development of obscenity law, free press and fair trial, contempt of court, right of privacy, advertising and antitrust regulations, copyright, and access to the press. Prerequisite: senior standing.

450-3 Mass Media Management. Basic economic and management theory and application of theory to the management process in the mass media. Individual projects involving analysis of management of a selected medium. Prerequisite: consent of instructor.

451-3 Current Media Problems. Readings and weekly seminar discussions on the role of the journalist in seeking solutions to the problems facing the mass media in the last third of the Twentieth Century. Involves questions of economics, structure, ethics, effects.

452-3 Ethics and News Media. An exploration of ethical problems confronting journalists and an evaluation of how these problems are handled by the media through a focus on current examples. The implications to the media and to society of successes and failures in meeting ethical concerns are discussed. Prerequisite: senior standing.

461-3 Specialized Publications. Functions, operations, and problems of industrial, trade, business, professional, literary, and other specialized publications. Management, personnel, and production practices. Use of research in solving problems and setting policies.

462-3 Magazine Article Writing. Principles, problems, and techniques involved in producing free-lance and staff-written magazine articles with an emphasis on determining the relationship between article content and audience market. Prerequisite: 311.

476-3 Advertising Campaigns. Application of advertising principles and techniques to the solution of a specific advertising problem facing a cooperating advertiser or advertising agency; problem analysis, development of strategy, media planning, message development, campaign presentation. Prerequisite: 372 and 374.

479-3 Social Issues and Advertising. Analysis of social issues involving advertising; economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international, and other problems and controversies. Prerequisite: senior standing.

490-1 to 6 (1 to 3, 1 to 3, 1 to 3) Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Undergraduates limited to maximum 2 credits per semester. Prerequisite: written consent of instructor and area head.

494-1 to 3 Practicum. Study, observation, and participation in publication or broadcast activities. Prerequisite: consent of instructor and area head. Mandatory Pass/Fail for undergraduates.

495-1 to 12 (1 to 6, 1 to 6) Proseminar. Selected seminars investigating media problems or other subjects of topical importance to advanced journalism majors. Seminars will be offered as the need and the interest of students demand. Prerequisite: senior standing.

500-3 Research Methodology in Mass Communication I.
501-3 Research Methodology in Mass Communication II.
504-3 Foundations of Mass Communication Theory.
505-3 Theoretical Issues in Mass Communication.
506-3 Significant Studies in Mass Communication Research.
510-3 Literature of Journalism.
511-3 Studies in Journalism History.
512-3 Press Freedom and Censorship.
520-3 Communication and National Development.
530-3 Historical Research in the Mass Media.
540-3 Legal and Governmental Research in the Mass Media.
550-1 to 12 (1 to 4, 1 to 4, 1 to 4) Topical Seminar.
560-3 Seminar: Critical and Persuasive Writing.
592-1 to 6 (1 to 3, 1 to 3, 1 to 3) Individual Research.
599-1 to 6 Thesis.
600-1 to 32 Dissertation.
601-1 to 12 per semester Continuing Research.

Language Arts (English and Reading) (Major)

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Law Enforcement (Program, Major)

Law enforcement today demands a wide range of knowledge and ability to meet the complexities of modern society. This program is designed both for the individual entering the profession and for persons already serving in law enforcement who wish to upgrade their skills.

Students in this program will not be taught "police skills" that are taught in a police academy, such as firearms or personal defense. They will learn methods of crime control, criminal behavior, methods of crime detection, community problems in law enforcement, criminal law, and police administration. They will develop an understanding of people and of interpersonal relationships.

The student will spend one term prior to graduation working under supervision with a police agency.

Police officers may enroll in the program on a part-time basis with the assurance that faculty members will help them to arrange classes compatibly with their duty schedules.

Full transfer of credit is guaranteed to students who have completed certificate programs in law enforcement at cooperating community colleges.

An advisory committee made up of persons active in law enforcement assists the program. Current members are: Capt. Raymond Niepert, commanding officer, Illinois State Police District 13, DuQuoin; W. Charles Grace, attorney at law, Murphysboro; and Ed Hogan, Chief of Carbondale Police Department.

This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in a combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Law Enforcement

GE-B 108, 202, 212	9
GE-D 101, 118, 153	8
Law Enforcement 103, 105, 108, 115, 205, 209, 210, 220, 221, 395	36
Electives	9
Total	62

Courses

103-3 Introduction to Criminal Justice. Enables the student to understand the workings of the criminal justice system and is the foundation course for the correctional services and law enforcement programs. Upon completion of this course, the student will have an understanding of the processes from arrest through imprisonment enabling assimilation of progressive courses such as criminal law and criminal behavioral theories. Lecture three hours.
104-3 Treatment Methods in Criminal Justice. The general goal of this course is to introduce to the student several treatment methods utilized in the criminal justice system. The student will briefly examine several treatment modalities and will discuss transactional analysis in detail. Other course items will include participation in a treatment group and a trip to a maximum security prison. Participation is required in many group exercises that may be scheduled at times other than regularly scheduled class time. These group exercises should help the student gain a working knowledge of treatment methods and group processes. Lecture three hours.
105-3 Criminal Behavior. Will enable the student to understand the psychological and sociological forces that make up criminal behavior. Upon completion of this course the student will have the knowledge to complete studies of the behavioral field in other disciplines of the University such as criminology. Lecture three hours.
106-3 Treatment Practicum. Will enable the successful student to apply the techniques learned in 104 in actual therapeutic settings and groups in area social service agencies and correctional institutions. Upon completion of this course, the successful student will be prepared to assist in leadership of therapeutic or treatment modalities and will have the ability to use these skills in human service agencies. Lecture three hours. Prerequisite: 104.
108-3 Supervision in Criminal Justice. The criminal justice supervisor's role in discipline, intradepartmental relations, problem-handling, and personnel policies. Problems relating to supervisory relationships, wages, grievances, morale, and safety. Lecture three hours.
115-3 Interpersonal Relations in Criminal Justice. Enables the student to develop a better understanding of people, their motivations, and their behavior patterns. A specific emphasis of this course is on individual and organizational intrapersonal and interpersonal relations. Upon successful completion of this course, each student should have developed the skills necessary for positive interaction with individuals in the free society and within a setting of incarceration. Participation in group exercises at times other than regularly scheduled class time is required. Lecture three hours.
203-3 Introduction to Security. An introduction to public and private security issues with a directed emphasis on industrial and retail security, loss prevention, physical security, and design.
205-3 Criminal Investigation. Enables the student to examine the major theories and techniques of criminal investigation. Upon successful completion of the course, the student should have an understanding of the techniques of criminal investigation and how these techniques can be applied to various types of investigations. The student should learn the value of adequate preservation, collection, and handling of physical evidence. Lecture three hours.
209-3 Criminal Law I. Enables the student to understand the due process functions of the criminal law. Upon completion of this course the student will be able to use a law library and will have an understanding of the laws of arrest, search and seizure, and evidence including recent Supreme Court decisions affecting daily work assignments. This course is also a foundation for Criminal Law II where the substantive law is covered. Lecture three hours.
210-3 Criminal Law II. Will enable the student to apply the law of due process (constitutional law) to the study of substantive law including Illinois state penal code and the Illinois Corrections Code. Upon completion of this course the student will have a working knowledge of how both the penal and corrections codes of the state enables society to successfully prosecute violators of the law. The student will also be able to brief cases pertaining to criminal and correctional law. Lecture three hours. Prerequisite: 209.
218-3 Introduction to Corrections. Will enable the student to develop an understanding of current problems (drugs, racial tension, subcultures) in correctional institutions; foundation of corrections in America; effect of recent court decisions and inmate population on correctional institutions; relationship of correctional services to the criminal justice system. Lecture three hours.
220-3 Probation, Parole, and Community Based Corrections. Will enable the student to understand the concept of alternatives to incarceration. The benefits and workings of probation and parole will be examined and the student will be exposed to the casework method utilized in these areas. The student will learn of alternatives to incarceration that are community based and of the need for community involvement and support for these efforts. Lecture three hours. Prerequisite: 103.
221-3 Police Administration. Principles of organization and modern management as ap-

plied to law enforcement agencies. The course will provide the student with an introduction to organizational theory, organizational behavior and administration. Special attention will be paid to the objectives of police operation and some of the factors lying ahead in the field of police administration. Lecture three hours. Prerequisite: 103 and 108.

395-9 Internship in Criminal Justice Practice. The pre-service student will be exposed to the operations of a criminal justice agency through an eight-week internship in that agency under supervision. Upon completion of the internship the student will have been exposed to all aspects of the agency and reinforce the student's attitudes toward that particular area of criminal justice. (Internship: 40 hours per week for eight weeks.) Prerequisite: sophomore standing and fifteen hours of credit in correctional services/law enforcement courses.

Liberal Arts (College, Courses)

Courses

105-3 Law in American Society. Faculty from the Departments of Economics, History, Philosophy, Political Science, Psychology, and Sociology consider the ways in which law affects American society. Topics such as students' rights, civil disobedience, crime, obscenity, and labor-management relations will be explored through lectures, discussion groups, guest speakers, and media presentation. Recommended for students who want to explore how the law works in society, and who want to consider possible careers in law. Elective Pass/Fail.

303-1 to 9 (1 to 3 per semester) Interdisciplinary Studies. Offered in a variety of forms, including lectures, readings, research, or field study. Initiated by at least two faculty members from different departments. Approval by the dean is required during the semester prior to its offering. May be repeated to equal a total of nine credits. Elective Pass/Fail.

310-3 Values in the Living World — Life, Normalcy, and the Natural. Intended for students who are interested in examining individual and social values which pertain to those professions based upon the biological sciences; e.g., medicine, nursing, zoology, forestry, etc. Elective Pass/Fail.

311-3 Values in the Communication Arts. The aim of this course is to examine, by means of readings, films and guest lecturers, some value perspectives of contemporary American life. This will be done in terms of ethical-aesthetic ideals and actual practices to be encountered in the public's most accessible and influential media; i.e., cinema, radio, television, and journalism. Elective Pass/Fail.

312-3 Applied Values in Society. A consideration of value problems and dilemmas faced by individuals in social science-based professions such as counseling, social welfare, administration of justice, etc. Among the problems to be considered are agency or corporate loyalty vs. individual conscience; individual good vs. social good; and professional ethics vs. individual ethics. Elective Pass/Fail.

Linguistics (Department, Major, Course)

The objective of the undergraduate major in linguistics is to provide broad, general training in theoretical and applied linguistics. The major is designed to help students achieve an awareness of the language systems of the past, and appreciation of human modes of communication, a fundamental understanding of the ever-changing linguistic environment in which they live, and the processes by which language is acquired. Moreover, education in linguistic methods trains a student to think analytically, to evaluate hypotheses, and to propose new solutions. The analytical models of linguistics have, since the 1930's, been recognized by other disciplines (notably anthropology, psychology, and sociology) as significant research paradigms. Linguistic theory has also been enriched by insights and models from other disciplines. Students are encouraged to use their elective hours to explore the related areas of anthropology, computer science, English, foreign languages, mathematics, philosophy, psychology, sociology, speech communication, speech pathology and audiology, and statistics.

The major in linguistics consists of a minimum of 32 semester hours comprising: (1) 16-18 semester hours in a core of basic courses in general linguistics, 300 or

401, 301, 402a, 403 or 405, 408; and (2) various structured alternatives, dependent on whether the student is more interested in theoretical or applied linguistics. Students concentrating on theoretical linguistics are advised to take 9 semester hours of 415, 440, and either 430 or 450, plus 6 or 7 semester hours of departmental electives. Students concentrating on applied linguistics are advised to take 8 semester hours of 453, 454, 455, plus 8 semester hours of 456, 415, and 445.

There is a foreign language requirement, potentially overlapping the College of Liberal Arts requirements, as follows: (1) one year of an uncommon or non-Western language, or (2) two years of any foreign language. Students planning graduate study in linguistics should take three years of foreign language study.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	45
Supplementary College Requirements (See Page 75)	(4) + 8-14
Requirements for Major in Linguistics	32
Linguistics 300 or 401, 301, 402a, 403 or 405, 408	16-18
Theoretical Linguistics Electives: Courses selected from Linguistics 415, 440, 430 or 450, plus departmental electives	14-16
or	
Applied Linguistics Electives: Courses selected from Linguistics 453, 454, 455, 456, 415, 445	14-16
Foreign Language Requirements (overlapping with college requirements)	10-16
Electives	13-25
Total	120

Minor

The Department of Linguistics offers two minors: one in linguistics and one in uncommon languages.

LINGUISTICS

The minor in linguistics (a minimum of 15 hours) draws upon the basic courses of the Department of Linguistics. It introduces the student to the structure of language, the historical development of languages, and the relation of language to the rest of culture. A minor in linguistics would be of special interest to students in anthropology, computer science, English, foreign languages and literatures, mathematics, philosophy, psychology, sociology, speech communication, and communication disorders and sciences.

Requirements for the minor in linguistics: (1) 300 or 401; (2) at least two courses (6-8 hours) from among the following: 301, 402a, 403, 405, 408; (3) additional courses from among the following to complete at least 15 hours: 402b, 402c, 404, 415, 430, 431, 440, 450, 453, 497.

UNCOMMON LANGUAGES

The minor in uncommon languages consists of a minimum of 15 hours at 200-level or above of an uncommon language offered by the Department of Linguistics. For specific languages, see course offerings.

Courses

100-6 (3, 3) Oral English for Foreign Students. Four class hours of oral English and one hour in-class composition. An elective of foreign students admitted to the University in a graduate or undergraduate program. Cannot substitute for Linguistics 101, 102, or 103, but may be taken concurrrently. May be taken singly.

101-3 Basic English Composition for Foreign Students. Instruction in the basic methods of English composition, focusing on the particular problems of foreign students. Tech-

niques of analyzing, summarizing, outlining, documenting, synthesizing, and revising. Basic English grammar relevant to composition problems of foreign students. Equivalent to GE-D 101. Limited to foreign students selected by proficiency exam on entrance.

102-2 Expository Writing for Foreign Students. Principles of expository essay style; study and practice in various techniques of expository writing. Directed at the particular problems of foreign students. Advanced study of English grammatical structures. Equivalent of GE-D 117. Limited to foreign students. Prerequisite: 101 or equivalent.

103-2 Technical Writing for Foreign Students. Principles of scientific and technical writing in English as a second language. Study and practice of the techniques of technical report writing. Directed at the particular problems of foreign students. Advanced study of grammatical tools and organization required for technical prose. Equivalent to GE-D 118. Limited to foreign students. Prerequisite: 101 or equivalent.

104-2 Grammar in Language. Description and explanation of the major grammatical categories and structures found in a wide variety of languages, including English. consideration of the role of language structures in such topics as the nature, origin, acquisition, and variation of language. Course is designed to give students insight into the basic concepts of grammar and show their interrelationship, importance, and functioning in human language.

210-10 (5, 5) Elementary Uncommon Languages. Introduction to the basic skills of listening, speaking, reading, writing, and the fundamentals of grammar. Must be taken in sequence. **(a-b)** Arabic, **(c-d)** Hebrew, **(e-f)** Persian, **(g-h)** Vietnamese, **(i-j)** Lao, **(k-l)** Cambodian. **(o-p)** Malay.

290-3 Advanced English Composition for Foreign Students. Designed for foreign graduate and undergraduate students who need further work in composition in English as a foreign language (EFL) beyond their entering TOEFL scores or successful completion of Linguistics 101 and either 102 or 103. Both group activities and individualized supervision will be provided. Prerequisite: 101 and either 102 or 103; or graduate status. Elective Pass/Fail.

300-3 Introduction to Descriptive Linguistics. An introductory survey of synchronic, descriptive linguistics: assumptions, methods, goals, terminology, and data manipulation. Elective Pass/Fail.

301-3 Introduction to Historical and Comparative Linguistics. An introductory survey of historical and comparative linguistics: assumptions, methods, goals, terminology, and data manipulation. Elective Pass/Fail.

321-3 Survey of Vietnamese Literature in Translation. Lectures and collateral readings in representative works of Vietnamese literature (poetry and prose) in English translation, with attention to literary genres and analyses of major works by poets, novelists, and playwrights writing in Chinese characters, demotic characters, or the romanized script from the 10th century until the modern period.

330-3 Language and Behavior. A wide-ranging examination of the implications of language study for people's view of themselves and their place in the world. Topics deal with the pervasiveness of verbal and non-verbal language in various aspects of modern society. Elective Pass/Fail.

341-3 Introduction to Intercultural Communication. (See Speech Communication 341.)

401-4 General Linguistics. Basic concepts and methods of general linguistics. Fundamentals of the nature, structure, and functioning of language. Data manipulation and problem solving. Elective Pass/Fail.

402-7 (3, 3, 1) Phonetics. **(a)** Theory and practice of articulatory phonetics. **(b)** Theory and practice of instrumental phonetics. Prerequisite: 402a. **(c)** Transcription laboratory. Prerequisite: 402a. May be taken singly. Elective Pass/Fail.

403-3 English Phonology. Study of English phonology, both American and British, including phonetics, phonemics, and prosodics. Prerequisite: 300 or 401, and 402a, or consent of department. Elective Pass/Fail.

404-3 American Dialects. Regional variation and social stratification of American English. Phonological and syntactic differences among the major dialects of American English. Prerequisite: one previous course in linguistics. Elective Pass/Fail.

405-4 Phonological Theories. A survey of various phonological theories involving the phoneme from the 19th century up to the present, including theoretical issues arising therefrom and relationships among the theories. Limited data analysis within the perspective of the different theories. Prerequisite: 300 or 401, and 402a. Elective Pass/Fail.

408-4 Syntactic Theory. Basic concepts and formalisms of transformational generative grammar. Data manipulation and problem-solving in English syntax. Prerequisite: 300 or 401 and 430 or consent of department. Elective Pass/Fail.

410-10 (5, 5) Intermediate Uncommon Languages. Review of the structure of modern spoken language. Introduction to written language. Emphasis on conversational style. The first semester carries undergraduate credit only. **(g-h)** Vietnamese. Prerequisite: 210 or equivalent.

411-3 The Linguistic Structure of Chinese. (See Chinese 410.)

412-3 The Linguistic Structure of Japanese. (See Japanese 410.)
415-3 Sociolinguistics. History, methodology, and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, pidgin and creole languages, and language planning. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.
420-8 (4, 4) Advanced Uncommon Languages. Advanced conversation and reading of third-year level materials in preparation for classes conducted in the language. **(g-h)** Vietnamese. Prerequisite: 410 or equivalent.
430-3 to 6 (3, 3) Grammatical Structures. Detailed analysis of the structure of particular languages. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.
431-3 Structure of the English Verb. An analysis of the English verb system. Special study of the modals and non-finites. Elective Pass/Fail.
440-1 to 6 (1 to 3 per topic) Topics in Linguistics. Selected topics in theoretical and applied linguistics. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.
445-4 Introduction to Psycholinguistics. (Same as Psychology 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems, and language and the brain. Elective Pass/Fail.
450-3 to 6 (3, 3) Language Families. A synchronic survey of particular language families or sub-families. May be repeated to a total of six hours credit with consent of department. Prerequisite: one previous course in linguistics or consent of department. Elective Pass/Fail.
453-4 Methods in Teaching English as a Second Language. Introduces the basic methods of teaching English as a second language, specifically as part of bilingual programs, and presents the theoretical premises and background from the fields of general linguistics, contrastive linguistics, psycholinguistics, education, and sociolinguistics. Prerequisite: undergraduate status. Elective Pass/Fail.
454-2 Observation and Practice in TESL. Lessons in teaching English as a second language are modeled and demonstrated live and via video-tape. In addition to microteaching and other peer-teaching, students observe ESL/EFL classes and laboratories and do tutoring and practice teaching under supervision as schedulable. Enrollment limited to undergraduates. Prerequisite: 453 or concurrent enrollment or consent of department. Mandatory Pass/Fail.
455-2 Materials in TESL. Examination and criticism of currently used textbooks in ESL and bilingual education programs, as well as other printed materials and visual and mechanical aids in teaching English as a second language. Prerequisite: 453 or consent of department. Elective Pass/Fail.
456-3 Contrastive Analysis. Examination of the interference of other languages into the English of ESL learners on the levels of phonetics, phonology, morphology, syntax, lexicon, semantics, and orthography. Study of written and spoken errors, diagnosis of errors and development of techniques for correction. Prerequisite: 453 or consent of department. Elective Pass/Fail.
497-1 to 8 Readings in Linguistics. Directed readings in selected topics. Prerequisite: consent of department and undergraduate status.
501-3 Contrastive Linguistics.
504-3 Dialectology.
506-4 Historical Linguistics.
507-3 Pidgin and Creole Languages.
510-3 History of Linguistics.
530-3 to 6 (3, 3) Historical Grammatical Structures.
540-1 to 12 (1 to 3 per topic) Studies in Linguistics.
545-3 Advanced Seminar in Psycholinguistics.
550-4 to 8 (4 per topic) Seminar in Linguistics.
570-4 Theory and Methods of EFL/ESL.
571-3 Language Laboratories in EFL/ESL.
572-2 Materials Preparation in EFL/ESL.
575-3 EFL/ESL Testing.
580-3 to 6 per semester Seminar in Special Problems of EFL/ESL.
581-2 Practicum in EFL/ESL: Oral English.
585-3 Practicum in EFL/ESL: Written English.
593-1 to 4 Research in Linguistics.
596-3 Stylistics.
597-1 to 8 Readings in Linguistics.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Marketing (Department, Major, Courses)

Marketing deals with all activities required to link production of goods and services with their use. The emphasis in all courses is upon the development of an analytical approach to the creative solution of marketing problems. The department will assist students in arranging suitable course sequences to prepare for careers in such fields as retailing, sales management, industrial marketing, physical distribution, promotional management, international marketing, and marketing administration.

Bachelor of Science Degree, College of Business and Administration

General Education Requirements	45
Professional Business Core (See page 63.)	40-41
Requirements for Major in Marketing	21
Marketing 329, 363, 390, 493	12
Marketing Electives	9
Electives	13-14
Total	120

Courses

304-3 Marketing Management. Management of the firm's marketing function within a dynamic operating environment. Includes study of such functions as product development, promotion, channel selection, logistics and market research. Prerequisite: junior standing or higher.

305-3 Behavioral and Social Aspects of Marketing. Examines underlying psychological, sociological, and economic factors which influence consumer behavior. Studies the impact of marketing activities on society, consumerism and legislation affecting the marketplace. Prerequisite: junior standing or higher.

329-3 Marketing Channels. The methods and processes used in the distribution of consumer and industrial products and services. Emphasis is upon the ways in which certain basic distribution functions are carried out in an integrated channel system. The role of a variety of manufacturers, wholesalers and retailers as parts of this system is analyzed. Prerequisite: 304 and junior standing or higher.

336-3 International Business. Business activities of firms and social organizations are examined in an international environment. The course will examine the fundamental concepts, and principles of international business. It will focus on the international environment as the international dimension of marketing, financial, accounting, managerial, and production functions. Prerequisite: junior standing or higher.

341-3 Transportation. Organization and economic aspects of the United States transportation system, including rail, highway, air, pipeline, and water transportation. Regulatory problems of transportation. Current transportation developments and situations. Prerequisite: junior standing or higher.

350-3 Small Business Marketing. Deals with principles involved in locating market opportunities and developing growth plans for businesses requiring a relatively low initial capital investment. Taught from the point of view of the owner-manager relying heavily upon case examples of successful entrepreneurship. Prerequisite: junior standing or higher.

363-3 Promotional Concepts. The role of promotional activities in the firm's marketing function — advertising, personal selling, sales promotion and publicity. The relationship of consumer behavior to the area of promotion. Prerequisite: 304 and junior standing or higher.

390-3 Marketing Research and Analysis. The basic procedures and theories appropriate to solving various types of marketing problems in the context of business organization and decision models. Prerequisite: 304 and Administrative Sciences 208 or equivalent and junior standing or higher.

401-3 Retail Management. Designed to present the basic principles in decision areas such as location, layout, organization, personnel, merchandise control, sales promotion, advertising, etc. Retail merchandising through managerial perspective. Prerequisite: 304 and junior standing or higher.

435-3 International Marketing. Analysis of international operations. Emphasis on the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms. Prerequisite: 304 and junior standing or higher.

438-3 Sales Management. Analysis of the management of the sales effort within the mar-

keting system. Philosophies, concepts, and judgment criteria of the sales function in relationship to the total marketing program. Prerequisite: 304 and Administrative Sciences 304 or 301 and junior standing or higher.

439-3 Industrial Marketing. Analysis of decision criteria related to the marketing of industrial products. Emphasis on program development, formulation of a marketing mix, and the behavioral relationships in the modern industrial organization. Prerequisite: 304 and junior standing or higher.

452-3 Physical Distribution Managment. Integration of physical distribution activities of the firm into a system. Transportation and location as elements of the system. Inventories and service as constraints upon the system. Planning, operation, organization, and management of the system. Prerequisite: 304 and junior standing or higher, or consent of the department.

463-3 Advertising Managment. Advertising from the viewpoint of business management. Develops an understanding of the role of advertising under various conditions. Problems of integrating advertising strategy into the firm's total marketing program. Prerequisite: 304 and 363 and junior standing or higher.

493-3 Marketing Policies. A comprehensive and integrative view of marketing policy formulation. Marketing decisions anaylzed and discussed. Prerequisite: 329, 363, and 390 (not more than one to be taken concurrently) and junior standing or higher.

499-1 to 6 (1 to 3, 1 to 3) Marketing Insights. Provides the student an opportunity to participate in an internship program, independent study, or seminar coinciding with areas of interest. May be repeated for credit only when topics vary. Prerequisite: junior standing or higher, and approval of the instructor and the department chairperson in the semester prior to enrollment.

Mathematics (Department, Major, Courses)

The Department of Mathematics offers majors in mathematics in three colleges.

In the College of Liberal Arts, a Bachelor of Arts degree is offered under one of the following options:

Option A is for the student interested in obtaining a broad mathematical background and in preparing for graduate school or for a variety of careers in industry or government;

Option B is for the student interested in a career which requires the use of the computer to assist in the mathematical analysis of problems which arise in science and industry;

Option C is similar to Option B but requires a more intensive study of computer science and is for the student interested in analyzing mathematical problems arising from the use of computers.

A student may also prepare for an actuarial career by taking courses in calculus, probability and statistics, numerical analysis, and linear programming. If a student is in the College of Business and Administration and is obtaining a major in business and administration, a major in mathematics may also be obtained while completing the secondary concentration. Such a major would consist of:

Mathematics Core: 150, 250, 251, 221

Five additional mathematics courses at the 300-400 level, of which at least four are at the 400 level, excluding 301, 311, 314, 400, 411 but recommending 483, 361, 475, 472, 480.

A student interested in completing a double major in business administration and mathematics should select courses beyond the business core from Administrative Sciences 352, 453, 456: Economics 315, 465: Finance 323, 325, 327.

In the College of Science, a Bachelor of Science degree is offered.

In the College of Education, a Bachelor of Science degree is offered for students interested in a secondary education teaching career.

Students intending to major in mathematics must plan schedules of mathematics courses numbered above 299 with a mathematics adviser. At least a *C* is required in all mathematics courses used to satisfy departmental requirements.

Bachelor of Arts Degree, College of Liberal Arts

MATHEMATICS MAJOR — OPTION A

General Education Requirements 45
Supplementary College Requirements (See Page 75) ..... (4) + 8-14
Requirements for Major in Mathematics 37-40
(Pass/Fail grade not acceptable)
Mathematics 150 (159 may substitute), 250 (259 may substitute), 251, 221 ..... (4) + 10
Computer Science 202 ..... (3)
Mathematics electives: seven courses at the 300-400 level, of which at least four are at the 400 level, excluding 301, 311, 314, 400, 411, but including 319 (or 419) and 352 (or 452) 21
Foreign Language (French, German, or Russian recommended) ..... (8)
Six to nine hours in one of the following areas, selection to be after the approval of the department: (a) engineering, (b) computer science, (c) physics, (d) economics, (e) business and administration; or any minor in a department of the College of Liberal Arts or of the College of Science, as defined by that department 6-9
Electives 21-30
Total 120

MATHEMATICS MAJOR — OPTION B

General Education Requirements 45
Supplementary College Requirements (See Page 75) ..... (4) + 8-14
Requirements for Major in Mathematics 41-45
(Pass/Fail grade not acceptable)
Mathematics 150 (159 may substitute), 250, 251, 221, 305, 361 (361 is not required if 475a is taken), 483 ..... (4) + 17-20
Computer Science 202, 204, 302, 306, 314f, 330 ..... (3) + 15
Mathematics electives: three courses at the 400 level, excluding 400, 411, and recommending 407, 409, 455, 471, 475a, 475b, 480, 484 9-10
Foreign Language (French, German, or Russian recommended) ..... (8)
Electives 16-26
Total 120

MATHEMATICS MAJOR — OPTION C

General Education Requirements 45
Supplementary College Requirements (See Page 75) ..... (4) + 8-14
Requirements for Major in Mathematics 43-44
(Pass/Fail grade not acceptable)
Mathematics 150 (159 may substitute), 250, 221, 301, 319, 483 ..... (4) + 17
Computer Science 202, 204, 302, 306, 330, 411 ..... (3) + 17
Mathematics 449 3
Mathematics electives at the 400 level, excluding 400, 411, but recommending 417, 419, 421, 451, 472, 480, 484 6-7

Foreign Language (French, German, or Russian recommended) ..... (8)
Electives 17-24
Total 120

Bachelor of Science Degree, College of Science

General Education Requirements ..... 45[1]
College of Science Requirements 12
Foreign Language (listed under major)
Biological Sciences (not General Education) 6
Physical Sciences (not General Education) 6
Requirements for Major in Mathematics 38
(Pass/Fail grade not acceptable)
Mathematics 150 (159 may substitute), 250 (259 may substitute), 251, 221 ..... (4) + 10
Computer Science 202 3
Mathematics electives: seven courses at the 300-400 level, of which at least four are at the 400 level, excluding 301, 311, 314, 400, 411, but including 319 (or 419) and 352 (or 452) 21
Foreign Language (French, German or Russian recommended) . (4) + 4
Electives 25
Total 120

[1]The 45 hour requirement may be reduced by taking College of Science requirements which are approved substitutes for General Education courses.

Bachelor of Science Degree, College of Education

Students in the College of Education with a major in mathematics must plan schedules of mathematics courses numbered above 199 with a mathematics adviser. Grades must be at least a *C* in mathematics courses numbered 150 or above used to satisfy these requirements.

General Education Requirements ..... 45[1]
Requirements for Major in Mathematics 33-34
Mathematics 150 (159 may substitute), 250 (259 may substitute) ..... (4) + 4
Mathematics 221 3
A student may take some of the above courses by proficiency examination or may substitute honors calculus for calculus.
Computer Science 202 3
Mathematics 311, 319, (or 419), 335, and 352 (or 452) 13
Mathematics 319E and 352E 2
At least 3 additional mathematics courses numbered above 399 8-9
Professional Education Requirement 25
See Teacher Education Program, page 66.
Electives 16-17
Total 120

[1]See Catalog section titled Curriculum, Instruction, and Media for specific certification requirements.

Unconditional admission into the Teacher Education Program in mathematics requires a 2.5 average in mathematics courses numbered above 149, including a

grade of *C* or better in at least two mathematics courses numbered above 299 (not including Mathematics 311, 314, 400, or 411.)

Approval for student teaching requires a grade of *C* or better in Mathematics 311 and a 2.25 average in mathematics courses numbered above 299, including a grade of *C* or better in at least four other mathematics courses (not including Mathematics 314, 400, or 411.) Students with a minor in mathematics must also meet this requirement to student teach in mathematics.

Minor

A non-teaching minor consists of Mathematics 150, or 140, or equivalent and 12 hours of mathematics credit at the 200 level or above, including at least one course at the 400 level (excluding 301, 311, 314, 400, and 411). Courses should be approved by a mathematics departmental adviser. Elementary and secondary education students interested in a mathematics minor should see a mathematics departmental education adviser to obtain a current list of specific requirements. A grade of *C* or better must be earned in all courses used to meet minor requirements.

Honors

Mathematics 159 and 259 provide honors material in calculus and analytic geometry for properly qualified freshman and sophomore students. Mathematics 395 and 495 are used for individual honors work for upper level undergraduates in mathematics.

Courses

108-3 College Algebra. The algebra of functions (polynomials, rational, exponential, logarithmetic), graphing, conic sections, solving equations including systems. Credit is not given for both 108 and 111. Prerequisite: GE-D 107 or two years of college preparatory mathematics including the content of algebra I and II. Elective Pass/Fail.

109-3 Trigonometry and Analytic Geometry. Trigonometric and inverse trigonometric functions, complex numbers, conic sections, polar coordinates. Credit is not given for both 109 and 111. Prerequisite: 108 or equivalent. Elective Pass/Fail.

111-5 Precalculus. An intensive course in college algebra and trigonometry for students who plan to take Calculus I. The algebra of funtions (polynomial, rational, exponential, logarithmetic, trigonometric, inverse trigonometric), graphing, conic sections, solving equations including systems, complex numbers, polar coordinates. Not open to students with credit in 108 or 109. Prerequisite: three years of college preparatory mathematics, including algebra I, algebra II, and geometry. Elective Pass/Fail.

114-4 Algebraic and Arithmetic Systems. Whole numbers, integers, rational numbers, and real numbers; numeration systems; algorithms; number theory; elementary algebra. Successful completion of this course requires a passing grade on a basic skills test of minimal mathematical proficiency. This course can be used to satisfy the mathematics requirements in General Education. Prerequisite: one year of high school algebra or GE-D 106 or equivalent.

116-5 Finite Mathematics and Algebra. Topics from intermediate algebra and college algebra, systems of linear equations, matrix algebra, Gauss-Jordan row reduction, linear programming, elementary probability theory, emphasis on business applications. Credit is not given for both 116 and 139. If there is prior credit in GE-D 107, Mathematics 108 or 111, only 3 hours of credit for 116 may be applied to graduation requirements. This course can be used to satisfy the mathematics requirement in General Education. Prerequisite: one year of high school algebra or GE-D 106.

117-5 Finite Mathematics and Calculus. A continuation of 116. Topics in algebra, elementary differential calculus, max-min problems emphasizing business applications, partial derivatives, elementary integral calculus with applications in economics. Credit hours for both 117 and 140 or for both 117 and 141 may not be applied to fulfillment of degree requirements. No credit hours for 117 may be applied to fulfillment of degree requirements if there is prior credit in 150. Prerequisite: 116.

139-3 Finite Mathematics. Set concepts and operations, combinations, permutations, elementary probability theory including Bayes formula, linear systems of equations, matrix algebra, Gauss-Jordan row reduction, introduction to linear programming. Credit is not given for both 116 and 139. Prerequisite: GE-D 107 or one and one-half years of high school algebra.

140-4 Short Course in Calculus. Techniques of differentiation, increasing and decreasing

functions, curve sketching, max-min problems in business and social science; partial derivatives, LaGrange multipliers, elementary techniques of integration. Credit hours for both 117 and 140 or for both 140 and 141 may not be applied to fulfillment of degree requirements. No credit hours for 140 may be applied to fulfillment of degree requirements if there is prior credit in 150. Prerequisite: GE-D 107 or one and one-half years of high school algebra.

141-4 Short Course in Calculus for Biological Sciences. Basic techniques of differentiation and integration. Population and organism growth problems solved by using calculus. Translation of physical problems in the biological sciences into mathematical problems. Credit hours for both 141 and 117 or for both 141 and 140 may not be applied to fulfillment of degree requirements. No credit hours for 141 may be applied to fulfillment of degree requirements if there is prior credit in 150. Prerequisite: 111 or equivalent.

150-4 Calculus I. Treatment of the major concepts and techniques of single-variable calculus, with careful statements but few proofs. Differential and integral calculus of the elementary functions with associated analytic geometry. Students interested in honors credit should see Mathematics 159. If there is prior credit in 140, 117, or 141, only 2 hours credit for 150 may be applied to graduation requirements. Prerequisite: 111 or equivalent. Elective Pass/Fail.

159-4 Honors Calculus I. Honors version of 150. Careful treatment of the major concepts and techniques of single-variable calculus. Credit is not given for both 150 and 159. Prerequisite: consent of department.

221-3 Introduction to Linear Algebra. Vector spaces, linear functions, systems of equations, dimensions, determinants, eigenvalues, quadratic forms. Prerequisite: 150. Elective Pass/Fail.

250-4 Calculus II. Develops the techniques of single-variable calculus begun in Calculus I and extends the concepts of function, limit, derivative, and integral to functions of more than one variable. The treatment is intuitive, as in Calculus I. Techniques of integration, introduction to multivariate calculus, elements of differential equations. Students interested in honors credit should see Mathematics 259. Prerequisite: 150. Elective Pass/Fail.

251-3 Calculus III. Further topics in calculus. Definite integrals over solid regions, applications of partial derivatives, vectors and vector operators, derivative of vector function, line integrals, Green's theorem. Prerequisite: 250. Elective Pass/Fail.

257-1 to 12 Concurrent Work Experience. As an instructional aide, the student will do tutoring under the direction of an established teacher and under the supervision of a representative of the Department of Mathematics. Prerequisite: consent of department. Mandatory Pass/Fail.

259-4 Honors Calculus II. An honors version of 250. Develops the techniques of single-variable calculus and extends the concepts of function, limit, derivative, and integral to functions of more than one variable. Credit is not given for both 250 and 259. Prerequisite: 159 or consent of department.

282-3 Introduction to Statistics. Designed to introduce beginning students to basic concepts, techniques, and applications of statistics. Topics include the following: organization and display of data, measures of location and dispersion, elementary probability, statistical estimation, and parametric and nonparametric tests of hypotheses. Prerequisite: three semester hours of college mathematics beyond general education mathematics; e.g. any of 111, 117, 139. Elective Pass/Fail.

283-3 Introduction to Applied Statistics. This course is experiment motivated, uses real-work data, and computer analysis of data. Statistical concepts discussed are descriptive statistics, elementary probability, expectation, sampling distributions, statistical estimation and testing, confidence intervals, correlation and regression, and contingency tables. The student is given experience in writing reports of experiments. Prerequisite: 140. Elective Pass/Fail.

301-3 Introduction to Discrete Structures. (Same as Computer Science 342.) Sets, relations, and functions. Elements of graph theory with emphasis on algorithms and applications to computing problems. Boolean algebras with applications to computer logic and logical design. Prerequisite: 111 and Computer Science 202 or 212 or consent of either department.

305-3 Introduction to Ordinary Differential Equations I. Solution techniques for differential equations with emphasis on second order equations, applications to physical sciences, numerical methods. Prerequisite: 250. Elective Pass/Fail.

306-3 Introduction to Ordinary Differential Equations II. Laplace transforms and Fourier series with applications to ordinary and partial differential equations. Systems of first order differential equations, stability. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

311-4 Teaching of Secondary Mathematics. The nature and objectives of the secondary mathematics curriculum. Particular attention is given to the means of introducing new ideas into the high school program. For students preparing to be certified teacher of secondary mathematics. Three lectures and two laboratory hours per week. Does not count toward a mathematics major in the College of Liberal Arts or in the College of Science. Prerequisite: 319, 319E, and 335.

314-3 Topics in Mathematics for Elementary Teachers. Measurement, metric system; geometric figures, transformations; symmetry, congruence, similarity; combinatorics, probability. This course may not be used to satisfy requirements for a mathematics major. Prerequisite: 114 or consent of department.

319-3 Introduction to Abstract Algebra. Basic properties of groups and rings: Binary operations, groups, subgroups, permutations, cyclic groups, iso-morphisms, Cayley's theorem, direct products, cosets, normal subgroups, factor groups, homomorphisms, rings, integral domains. Prerequisite: 221; plus for secondary education majors, concurrent enrollment in 319E. Elective Pass/Fail.

319E-1 Modern Algebra as Applied to the Secondary Schools. Two hours per week. The applicability of the concepts of modern algebra, particularly the field axioms and the function concept, to the secondary curriculum. Prerequisite: concurrent enrollment in 319. Mandatory Pass/Fail.

335-3 Concepts of Geometry. Introduction to the foundations of Euclidean and non-Euclidean geometry with an emphasis on axiom systems, models, and counterexamples. Topics include metric geometry, betweenness, plane separation, congruence, absolute plane geometry, the critical function, and parallelism. Prerequisite: 221 or 250. Elective Pass/Fail.

352-3 Introduction to Analysis. A rigorous treatment of concepts introduced in elementary calculus, such as real number system, limits and continuity, derivatives, integration, transcendental functions. Prerequisite: 221, 250; plus for secondary education majors, concurrent enrollment in 352E. Elective Pass/Fail.

352E-1 Analysis as Applied to the Secondary Schools. Two hours per week. Sequences, series, infinite decimals, continuity. Applications to the secondary curriculum. Prerequisite: concurrent enrollment in 352. Mandatory Pass/Fail.

361-3 Numerical Calculus. (See Computer Science 361.)

380-3 Elements of Probability. Probability as a mathematical system. Axioms, permutations and combinations, random variables, generating functions, limit theorems, and Monte Carlo procedure. Prerequisite: 250 and Computer Science 202. Elective Pass/Fail.

395-1 to 6 Readings in Mathematics. Supervised reading in selected subjects. Prerequisite: 3.00 grade point average in mathematics and consent of chairperson.

400-3 History of Mathematics. An introduction to the development of major mathematics concepts. Particular attention given to the evolution of the abstract concept of space, to the evolution of abstract algebra, to the evolution of the function concept, and to the changes in the concept of rigor in mathematics from 600 B.C. Does not count toward a mathematics major in the College of Liberal Arts or in the College of Science. Prerequisite: 319 and 352 or consent of instructor. Elective Pass/Fail.

405-3 Intermediate Ordinary Differential Equations. Topics selected from linear systems, existence and uniqueness for initial value and boundary value problems, oscillation, and stability. Prerequisite: 306. Elective Pass/Fail.

406-3 Eigenfunction Methods in Applied Mathematics. Inner product spaces; orthonormal systems; Bessel's inequality; quadratic forms; Hermitian operators; eigenfunctions and eigenvalues; minimization properties of eigenfunctions; the spectral theorem for a Hermitian matrix; functions of matrices; Sturm-Liouville differential operators; convergence properties of Fourier Series; the Legendre, Laguerre, Hermite, and Tchebycheff families of orthogonal polynomials; functions of a Sturm-Liouville operator; Green's functions; the Laplacian operator in 1, 2, and 3 dimensions. Prerequisite: 221 and 305. Elective Pass/Fail.

407-3 Introduction to Partial Differential Equations. First order linear and quasilinear partial differential equations, characteristics, second order linear partial differential equations, classification of types, boundary value and initial value problems, well posed problems, the wave equation, domain of dependence, range of influence, Laplace's equation and Dirichlet problems, the maximum principle. Poisson's integral, fundamental solution of the heat equation. Prerequisite: 251, 305. Elective Pass/Fail.

409-3 Fourier Transform and Some Applications. Fourier transform, Fourier's integral theorem, convolution; linear systems; impulse functionals, basic techniques for evaluating Fourier transforms; transfer function of a linear system; band limited functions, sampling theorem; systems analysis; discrete and fast Fourier transforms. Prerequisite: 305 and 221 or 306.

411-1 to 6 (1 to 3, 1 to 3) Mathematical Topics for Teachers. Variety of short courses in mathematical ideas useful in curriculum enrichment in elementary and secondary mathematics. May be repeated as topics vary. Does not count toward a mathematics major. Elective Pass/Fail.

412-3 Problem Solving Approaches to Basic Mathematical Skills. Content of basic skills at all levels of education and the development of these skills from elementary school through college; emphasis on problem solving and problem solving techniques; determination of student skills and proficiency level. Credit may not be applied toward degree requirements in mathematics. Prerequisite: 314 or equivalent.

417-3 Applied Matrix Theory. Matrix algebra and simple applications, simultaneous

linear equations, linear dependence and independence of vectors, rank and inverses, determinants, eigenvalues and eigenvectors, quadratic forms, applications. This course may not be counted toward a graduate degree in mathematics. Prerequisite: 139 or 221 or consent of department. Elective Pass/Fail.

419-4 Algebraic Structures I. Groups, subgroups, normal subgroups and homomorphism theorems, permutation groups, finite direct products, finite abelian groups, p-groups and Sylow's theorem, normal and subnormal series, Jordan Holder theorem. Rings and subrings, divisibility theory in integral domain, polynomial rings. Prerequisite: 319 or consent of department. Elective Pass/Fail.

421-3 Linear Algebra. Fields, vector spaces over fields, triangular and Jordan forms of matrices, dual spaces and tensor products, bilinear forms, inner product spaces. Prerequisite: 221. Elective Pass/Fail.

425-3 Theory of Numbers. Properties of integers, primes, divisibility, congruences, quadratic forms, diophantine equations, and other topics in number theory. Prerequisite: 319 or consent of department. Elective Pass/Fail.

426-3 Introduction to Mathematical Logic. General introduction to the method of mathematical logic, forming of denials, the statement calculus including the deduction and completeness (with respect to truth tables) theorems, and the predicate calculus including the deduction theorem, deduction techniques; (in the predicate calculus) normal forms and equality, first order theories, first order number theory, consistency, truth (in the model-theoretic sense), completeness theorem (with respect to the model-theoretic definition of validity), independence, categoricity, decidability, and a brief introduction to Gödel's theorem. Prerequisite: 301, 319, 352, or Philosophy 320. Elective Pass/Fail.

433-3 Introduction to Topology. Study of continuity, convergence, compactness, and completeness in the context of metric spaces. Prerequisite: 352 or consent of department. Elective Pass/Fail.

435-3 Elementary Differential Geometry. An introduction to modern differential geometry through the study of curves and surfaces in R^3. Local curve theory with emphasis on the Serret-Frenet formulas; global curve theory including Fenchel's theorem; local surface theory motivated by curve theory; global surface theory including the Gauss-Bonnet theorem. Prerequisite: 251 and 221. Elective Pass/Fail.

437-3 Elementary Algebraic Topology. Topological spaces; continuous maps. Finite products. Connectivity. Compactness. Manifolds. Classification of surfaces. Homotopic maps. Fundamental group. Covering spaces. Lifting theorem. Prerequisite: 319. Elective Pass/Fail.

449-3 Combinatorics and Graph Theory. (Same as Computer Science 449.) An introduction to graph theory and combinatorial mathematics with computing applications. Topics include permutations and combinations, generating functions, recurrence relations, the principle of inclusion and exclusion. Polya's theory of counting, graph theory, transport networks, matching theory, block designs. Prerequisite: 301 or 319 or consent.

451-3 Introduction to the Theory of Computing. (See Computer Science 451.)

452-4 Advanced Calculus. Fundamental concepts of analysis; infinite series, functions and series of functions, uniform convergence, functions of bounded variation, Riemann-Stieltjes integral, functions of several variables, implicit functions and extreme values. Prerequisite: 352 or consent of department. Elective Pass/Fail.

455-3 Introduction to Complex Analysis and Applications. Complex numbers, analytic functions, line integrals, the Cauchy-Goursat theorem and its implications, power series, Laurent series, polar and essential singularities, analytic continuation, contour integration, and the residue theorem, conformal mapping, asymptotic expansions. Prerequisite: 251. Elective Pass/Fail.

457-3 Methods of Quantitative Analysis. (Same as Business Administration 451.) Introductory survey of basic quantitative methods necessary for graduate study in business; designed for students with deficiencies in methods of quantititative analysis. Course consists of introduction to calculus, matrix algebra, and probability. Extensive use is made of business examples. Prerequisite: enrollment in Master of Business Administration program or consent of instructor.

458-3 Statistical Methods in Business. Descriptive statistics, probability distributions, statistical estimation and hypothesis testing with business applications, chi-square tests, linear regression, analysis of variance, index numbers, interpretation of computer output. Prerequisite: 457 or equivalent and graduate standing in College of Business and Administration.

460-3 Transformation Geometry. Geometry as the study of properties invariant under congruences, similarities, affine transformations, and projectivities. Prerequisite: 221 and 319. Elective Pass/Fail.

471-3 Introduction to Optimization Techniques. (Same as Commputer Science 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming, and dynamic programming. Prerequisite: 221, 250, Computer Science 202 or 212.

472-3 Linear Programming. (Same as Computer Science 472.) Nature and purpose of the

model. Development of the simplex method. Application of the model to various problems. Introduction to duality theory. Transportation and network flow problems. Postoptimality analysis. Prerequisite: 221 and Computer Science 202 or 212.

473-3 Reliability Theory. Formulation of the concept of reliability in term of probability theory. Failure distributions and failure rates. Elements of renewal theory. Age and block replacement policies, optimal replacement policies for classes of failure distributions. Prerequisite: consent of department. Elective Pass/Fail.

475-6 (3, 3) Numerical Analysis. (Same as Computer Science 464.) An introduction to the theory and practice of computation with special emphasis on methods useful with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, numerical differentiation and integration, solution of differential equations, matrix calculations and the solution of systems of linear equations. Must be taken in a,b sequence. Prerequisite: 221, 250, Computer Science 202 or 212.

480-4 Introduction to Probability. This is a comprehensive introduction to probability theory at a level suited to most upper division undergraduates and first year graduate students. Topics include: event spaces, probability functions, combinatorics, generating functions, conditional probability, independence, random variables, probability distributions, expectations, moments, characteristic functions, inversion formulae, sums of independent random variables, the multivariate normal distributions, the central limit theorem, the weak and strong laws of large numbers, Monte Carlo applications. Prerequisite: 251. Elective Pass/Fail.

481-3 Elements of Stochastic Processes. An introduction, including normal, Poisson, and Markov processes. Prerequisite: 480. Elective Pass/Fail.

483-4 Mathematical Statistics in Engineering and Physical Sciences I. Introduction to statistical theory with applications in engineering and the physical sciences. Probability: axioms, distributions including noncentral distributions, moments and moment generating functions, order statistics. Statistical inference: point and interval estimation, testing hypotheses, likelihood ratio tests. Prerequisite: 250. Elective Pass/Fail.

484-4 Mathematical Statistics in Engineering and Physical Sciences II. An introduction to linear models and the design of experiments with applications in engineering and the physical sciences. Analysis of the general linear model, basic designs and criteria, response surface analysis and factor analysis. Statistical computation. Prerequisite: 483 and 221, or consent of instructor. Elective Pass/Fail.

487-3 Nonparametric Methods in Statistics. A discussion of confidence intervals and tests of hypotheses where no functional form is postulated for the population. Prerequisite: 483 or 480. Elective Pass/Fail.

489-3 Sample Survey Methods. Introduction to methods for sampling human populations, wildlife populations, and spatial distributions, and associated methods of data analysis. Emphasis will be given to criteria for choosing the appropriate sampling design and to the avoidance of nonsampling errors. Prerequisite: 483 or consent of instructor.

495-1 to 6 Special Topics in Mathematics. Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Prerequisite: consent of chairperson and instructor. Elective Pass/Fail.

501-3 Real Analysis.

505-3 Ordinary Differential Equations.

506-1 to 9 Advanced Topics in Ordinary Differential Equations.

507-3 Partial Differential Equations.

508-3 Integral Equations.

510-3 Mathematical Logic.

516-8 (4, 4) Statistical Analysis in the Social Sciences.

520-3 Algebraic Structures.

522-3 to 9 per topic (3, 3, 3) Advanced Topics in Algebra.

525-3 Number Theory.

526-3 to 9 per topic (3, 3, 3) Advanced Topics in Number Theory.

528-3 Formal Languages and Automata.

529-3 Theory of Computability.

530-3 General Topology.

531-3 Algebraic Topology.

532-3 to 9 per topic (3, 3, 3) Advanced Topics in Topology.

536-3 Differential Geometry.

537-3 to 9 per topic (3, 3, 3) Advanced Topics in the Topology and Geometry of Manifolds.

550-1 to 6 per topic (1 to 3 per semester) Seminar.

551-3 Introduction to Functional Analysis.

552-3 to 9 per topic (3, 3, 3) Special Topics in Analysis.

553-3 to 9 (3, 3, 3) Special Topics in Functional Analysis.

555-3 Complex Variables.

560-3 Calculus of Variations.

567-6 (3, 3) Econometrics I and II.

570-3 to 9 (3, 3, 3) Topics in Operations Research.
572-3 to 9 per topic (3, 3, 3) Advanced Numerical Analysis.
580-3 Statistical Theory.
581-3 Probability.
582-3 to 6 per topic (3, 3) Advanced Topics in Probability and Statistics.
584-3 Advanced Linear Models and Experimental Design.
585-1 to 2 Statistical Consulting.
588-3 Multivariate Statistical Analysis.
595-1 to 12 per topic Special Project.
599-1 to 6 Thesis.
600-1 to 30 Dissertation.
601-1 to 12 per semester Continuing Research.

Medical Education Preparation (Courses)

Courses

400-1 to 6 (1 per semester) MEDPREP Seminar. Seminar on social, professional, and scientific issues of interest to students planning a career in medicine or dentistry. Topics: **(a)** orientation; **(b)** medical/dental seminar. Required of MEDPREP participants. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to MEDPREP students. Must be taken in a,b sequence. Mandatory Pass/Fail.
401-1 to 20 (1 to 2 per area) MEDPREP Basic Skills. Focus on skills critical for academic success in preprofessional and professional training. Areas: **(a)** learning skills; **(b)** science process skills; **(c)** quantitative skills; **(d)** perceptual motor skills; **(e)** interpersonal skills; **(f)** reading skills; **(g)** written communication skills; **(h)** vocabulary skills; **(i)** speed reading; **(j)** other. All areas required or proficiency demonstrated within the first year in program. Not for graduate credit. Prerequisite: restricted to MEDPREP students. Areas c, d, e, f, g, and i are Mandatory Pass/Fail.
402-1 to 12 (1 to 2 per topic) MEDPREP Special Problems. Seminars, workshops, lectures, and field experiences related to preparing the student for medical/dental school and careers in medicine or dentistry. Topics: **(a)** MCAT/DAT orientation; **(b)** research seminar; **(c)** clinical experience; **(d)** independent research; **(e)** independent readings; **(f)** other. Topic **(b)** required of all MEDPREP participants. May be taken for graduate credit only with written permission of the relevant department and graduate dean. Prerequisite: restricted to MEDPREP students. Topic **(c)** Mandatory Pass/Fail.
403-1 to 15 (1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 3) MEDPREP Biology Tutorial. Depending on individual need content will be remedial, supplementary to concurrent biological science courses, or additional permitting acceleration. Sections will be **(a)** genetics; **(b)** anatomy, **(c)** physiology, **(d)** embryology, **(e)** microbiology, **(f)** zoology, **(g)** special. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to MEDPREP students or consent of instructor.
404-1 to 14 (1 to 2; 1 to 2; 1 to 2; 1 to 2; 1 to 3; 1 to 3) MEDPREP Chemistry Tutorial. Depending on individual need content will be remedial, supplementary to concurrent preprofessional chemistry courses (Chemistry 222a,b; 344 and 346; and 450) or additional permitting acceleration. Sections will be **(a,b)** inorganic; **(c,d)** organic; **(e)** biochemistry; **(f)** other. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to MEDPREP students.
405-1 to 4 (1 to 2, 1 to 2) MEDPREP Physics Tutorial. Depending on individual need content will be remedial, supplementary to concurrent preprofessional physics courses or additional permitting acceleration. Sections will correspond to two semester physics sequences. May be taken for graduate credit only with written permission of the relevant department and the graduate dean. Prerequisite: restricted to MEDPREP students.

Microbiology (Department, Major, Courses)

Microbiology deals with the study of microorganisms, examining various forms, their classifications, growth, reproduction, heredity, biochemistry, ecology, and their relationship to other living organisms including humans. The following program of study prepares one for laboratory or teaching positions after the bachelor's degree or for graduate study leading to advanced degrees. Students who anticipate the pursuit of higher degrees in microbiology are strongly urged to

continue their study of chemistry through physical chemistry, which is an entrance requirement to graduate study in microbiology at many institutions.

Opportunities for specialized training in diagnostic bacteriology, virology, immunology, genetics, biochemistry, and industrial processes are available.

Bachelor of Arts Degree, College of Science

General Education Requirements		45[1]
Supplementary College of Science Requirements		7
Mathematics 108 and 109 or 111 (or its equivalent), or 140	(3) + 3	
Foreign Languages	(4) + 4	
Requirements for Major in Microbiology		63-66
Microbiology 301, 302		7
Microbiology electives: senior level work consisting of 15-18 lecture credits and a minimum of 8 laboratory credits	23-26	
Biology 305 and one from Biology 306, 307, 308, or 309		6[2]
Chemistry 222a,b 344, 345, 346, 347		19[2]
Physics 203a,b and 253a,b		8[2]
Electives		2-5
Total		120

[1]The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.

[2]These courses will meet the biological and physical science requirements for the College of Science and may be substituted for a maximum of 12 hours in General Education.

Minor

A minor in microbiology consists of 16 semester hours, to include 301, 302, and other courses determined by the student in consultation with the microbiology adviser.

Courses

201-4 Elementary Microbiology. Basic concepts of microbiology, classification, metabolic activity and the effect of physical and chemical agents on microbial populations. Host-parasite interactions. Infectious agents, particularly as they affect the oral cavity; methods of transmission and control. Prerequisite: for students of dental hygiene.

301-4 Principles of Microbiology. Morphology, structure, metabolism, population dynamics, and heredity of the microbial agents with emphasis on pure culture methods of study of bacteria, viruses, and related organisms. Three hours lecture, three hours laboratory. Fall semester. Prerequisite: one year of college chemistry and GE-A 115, or equivalent. Elective Pass/Fail.

302-3 Molecular Biology. Molecular structure, dynamics, and genetics of living cells and viruses, with particular attention to the transfer of biological information. Spring semester. Prerequisite: 301 or Biology 305. Elective Pass/Fail.

403-3 Medical Bacteriology Lecture. A survey of the mechanisms of infection, epidemiology, and immunity and the specific application of these principles to the symptomatology, diagnosis, treatment, and control of the more common bacterial infections of humans. Three hours lecture. Fall semester. Prerequisite: 301.

404-2 Medical Bacteriology Laboratory. Procedures for the collection and handling of medical specimens for microbial examination and for cultivation and identification of the pathogenic organisms by their morphological, biochemical, and serological characteristics and the fundamental role of the bacteriologist in the diagnosis of infectious diseases. Four hours laboratory. Fall semester. Prerequisite: 403 or concurrent enrollment.

421-3 Foods and Industrial Microbiology Lecture. The relationships of microorganisms to the preparation and preservation of foods; their application to the industrial production of beverages, foods, antibiotics, and other commercial products. Consideration of sanitation, pollution, and recycling of waste products into useful materials. Pure food and drug regulations. Three hours lecture. Prerequisite: 301.

422-2 Foods and Industrial Microbiology Laboratory. Methods for preparation, preservation, sanitary inspection, and analyses of foods and industrial products. Four hours laboratory. Prerequisite: 421 or concurrent enrollment.

425-3 Biochemistry and Physiology of Microorganisms Lecture. Chemical composition, cellular structure, and metabolism of microorganisms. Prerequisite: organic chemistry.

426-2 Biochemistry and Physiology of Microorganisms Laboratory. Laboratory course to study techniques for investigating the chemical composition, cellular structure and metabolism of microorganisms. Prerequisite: 425 or concurrent enrollment, organic chemistry.
441-3 Virology Lecture. General properties; classification and multiplication of bacterial and animal viruses; lysogeny; immunological and serological reactions; relation of viruses to cancer; consideration of selected viral diseases of animals. Prerequisite: 301 and 302.
442-2 Virology Laboratory. Tissue culture methods, multiplication and assay of animal and bacterial viruses, purification, electron microscopy, interference, immunity. Five hours laboratory. Prerequisite: 441 or concurrent enrollment.
451-3 Immunology Lecture. Natural and acquired immunity. Antigens, antibodies, and antigen-antibody reactions in vitro and in vivo. Three hours lecture. Prerequisite: 403.
452-2 Immunology Laboratory. Natural defense mechanism and immune response, preparation of antigens and antibodies, serological reactions, conjugated antibodies, electrophoresis, immunological reactions in vivo. Five hours laboratory. Prerequisite: 451 or concurrent enrollment.
453-3 Clinical Microbiology and Immunology Lecture. Lectures dealing with the fundamentals and clinical applications of microbiology and immunology and the properties, pathogenesis, and control of bacterial, viral and mycotic infections in people. Three hours lecture. No limit on enrollment. Prerequisite: 403, 441, and 451.
454-2 Clinical Microbiology and Immunology Laboratory. Methods and procedures in the clinical diagnosis of microbiological and immunological diseases in people. Four hours laboratory. Enrollment limited to 12. Prerequisite: 404, 442, and 452, consent of instructor, and 453 or concurrent enrollment.
460-3 Genetics of Bacteria and Viruses Lecture. Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing, and reactivation phenomena. Three hours lecture. Prerequisite: 301.
461-3 Genetics of Bacteria and Viruses Laboratory. Genetic mechanisms, mutation, transformation, recombination, transduction, lysogeny, phenotypic mixing, and reactivation phenomena. Six hours laboratory. Prerequisite: 460 or concurrent enrollment.
470-3 Procaryotic Diversity. A consideration of the major groups of procaryotes with special emphasis on their comparative physiology and biochemistry. Prerequisite: 301 or equivalent and one year of organic chemistry.
490-1 to 3 Undergraduate Research Participation. Investigation of a problem either individually or as part of a research group under the direction of a member of the faculty. Not for graduate credit. Prerequisite: 3.0 grade point average in microbiology and consent of instructor.
500-1 Seminar.
504-3 Methods of Microbiological Research.
505-1 Special Topics in Microbiology.
511-1 to 7 Research.
520-2 Advanced Microbial Physiology and Control Mechanisms.
528-1 to 3 Readings in Microbiology.
540-3 Advanced Virology.
542-3 Molecular Virology.
551-3 Advanced Immunology.
562-3 Molecular Genetics.
599-1 to 3 Thesis.
600-1 to 12 Dissertation.
601-1 to 12 per semester Continuing Research.

Mining Engineering

(SEE ENGINEERING)

Molecular Science (Major [Doctoral Only], Courses)

Courses

592-1 Colloquy in Molecular Science.
597-2 to 30 Selected Topics in Molecular Science.
598-2 to 16 Special Projects in Molecular Science.
600-1 to 36 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Mortuary Science and Funeral Service (Program, Major, Courses)

This program is the only mortuary science program offered in a public university in Illinois. The program was developed in response to a request from the Illinois Funeral Directors Association. The Association's members recognized the need for a school of higher education to educate funeral service practitioners. The program is fully accredited by the American Board of Funeral Service Education and the Illinois Department of Registration and Education.

This program also is designed to accommodate students transferring from community colleges at the end of the first year. Enrollment of beginning students is limited by size of faculty and physical facilities with new students admitted only in the fall semester. Additional application information is required other than that required for admission to the University.

The program requires two academic years of study and one summer of internship in a funeral home for completion. In addition to technical courses which prepare the student for the profession, the student will take a number of courses which will lead to an understanding of the psychological, sociological, and theological implications of death.

Charge for laboratory costs will be approximately $15.

Faculty members are licensed funeral directors and embalmers with experience in the profession. Professional courses are offered in the program's own preparation room-laboratory. Graduates of the program will have satisfied requirements for the trainee license and will be eligible to write the State and/or National Board examinations and to begin serving their traineeship. Career opportunities are excellent and to date, all graduates who desired placement have been employed.

Persons active in the profession serve on the program's advisory committee.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale or in combination with community college of other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Mortuary Science and Funeral Service

GE-A 115, 106	6
GE-B 202	3
GE-D 101	3
GE-D 117, 118, or 119	2
GE-D 153	3
School of Technical Careers 120	3
Secretarial and Office Specialties 208	3
Mortuary Science 101, 102, 108, 225a,b, 230, 250a,b, 256, 257, 375a,b, 380	48
Elective (in Health Education)	2
Total	73

Courses

101-3 Orientation to Funeral Service. Students will trace the history of funeral services from ancient times through practices with emphasis on the development of funeral practices in the United States. Students study the customs of various cultures throughout the world including customs in the United States. They will demonstrate a knowledge of

funeral service organizations and will discuss topical areas of current discussion. Lecture three hours.

102-4 Restorative Art. Students will study the anatomical structure of the cranial and facial areas of the human skull. They will describe the facial proportions and markings. The student studies the methods and techniques used to restore facial features that might have been destroyed by traumatic and pathological conditions. They will demonstrate a knowledge of color and cosmetology theory. Laboratory assignments will include modeling, applying cosmetics, making hair restorations and casting facial features. Lecture three hours. Laboratory two hours.

108-3 Funeral Service Psychology. Designed to acquaint the student with an overview of psychology in funeral service as applied to death, grief, and mourning. Students will examine interpersonal and public relations as they affect the funeral service practitioner in relationship with the public served. Lecture three hours.

225-8 (4, 4) Embalming Theory and Practice. **(a)** The student will be introduced to techniques of embalming through a study of the body, sanitation, embalming agents, instruments, and methods of embalming. The student studies the theory, practices, and techniques of sanitation; and restoration and preservation of deceased human remains. Laboratory experience will consist of embalming deceased remains and of other related activities. Lecture three hours. Laboratory two hours. **(b)** The student will study the anatomy of the circulatory system, the autopsied case, the cavity embalming, the contents of the thoracic and abdominal cavities, and the treatment of "special cases" that might be encountered in the embalming process. Laboratory experience is a continuation of 225a. Lecture three hours. Laboratory two hours. Must be taken in a,b, sequence.

230-4 Mortuary Anatomy. The student will study the structure and function of the human body as a whole including: general organization, structural organization, tissues, skeletal system, nervous system, circulatory system, physiology of circulation, glands, respiratory system, digestive system, genito-urinary system, integument, and special senses. Lecture four hours.

250-8 (4, 4) Mortuary Management. **(a)** The student will examine the problems involved in the practice of funeral management. Included are the funeral director's responsibilities from the first call until the completion of the last service rendered the family, funeral home operation and records, ethics and professional regulations. Lecture four hours. **(b)** The student will trace the laws and regulations that govern the practice of funeral service, and study the Illinois License Law, Vital Statistics Act, transportation rules, and Social Security regulations. The funeral director's reponsibilities and relationships to local boards of health and the State Department of Public Health are emphasized. Lecture four hours.

255-5 Embalming Chemistry. The student will study the chemistry of the body, sanitation, toxicology, chemical change in deceased human remains, disinfection, and embalming fluids. Laboratory experiments will complement lecture material. Lecture four hours. Laboratory two hours.

256-4 Introductory Microbiology. The student will survey microbiology: morphology, structure, physiology, populations of microbial organisms, microbial destruction, immunology, and pathogenic agents. Lecture four hours.

257-4 Pathology. Students will be introduced to the study of the cause, course, and effects of diseases upon the human body with stress on ways in which tissue changes affect the embalming process. Lecture four hours. Prerequisite: 230 or equivalent.

375-8 (4, 4) Funeral Service Internship. **(a)** Students will spend one summer in a university approved funeral home learning in actual practice situations: functional organization, procedures, and policies of the establishment. They will perform duties and services as assigned by preceptor and coordinator to include surveillance of and participation in the execution of total services rendered to a family. **(b)** They will be given an opportunity to learn embalming techniques by active participation in the preparation room. Service reports and assignments are required to be completed by the student. Prerequisite: all other requirements of the Mortuary Science curriculum must be met. Must take a and b concurrently.

380-2 Funeral Service Seminar. Formal discussions are held to evaluate the experience and progress of the participants in the internship program. Preparations are made for the board examinations. Prerequisite: concurrent enrollment in 375. Mandatory Pass/Fail.

Museum Studies (Minor)

Museum studies is available as an undergraduate interdisciplinary minor. The purpose of the minor is to introduce students to various aspects of museum work, to acquaint them with the opportunities and problems faced by museums and museum personnel, and to create career opportunities for students who might seek

employment in a museum. Emphasis will be placed on actual work situations in such diverse museum functions as exhibition, curation, cataloging, acquisition, and administration.

Minor

The museum studies minor consists of 18 hours, with 12 hours of required core courses and 6 hours of electives. Within the core courses listed below students must take six hours offered by one department and six hours from at least two other departments. Students may then elect six hours from either the other core courses or electives listed below.

Core Courses: Anthropology 450a and 450b; Art 447; Geology 445; History 497 and 498.
Electives: Anthropology 404 and 460; Art 207 and 499; Political Science 441; Geology 440; History 490 and 493.

Music (School, Major, Courses)

The requirements for entrance and for graduation as set forth in this bulletin are in accordance with the published regulations of the National Association of Schools of Music, of which this school of music is a member.

Students who wish to major in music are assumed to have acquired extensive experience in performing with school groups and/or as soloist, basic music reading ability, and a strong sensitivity to music and a desire to communicate it to others. Those without such a background will have to complete additional preparation, which may extend the time to graduation beyond four academic years. Music credits earned at other accredited institutions will apply toward requirements, but the transferring student remains subject to evaluation by the appropriate music faculty for proper placement in the music curriculum.

All students in the Bachelor of Music degree program must maintain satisfactory membership in one of the following ensembles: Music 011, 013, 014, 017, 020, 021, or 022 every term in residence. The choice of major ensembles must be compatible with the student's applied field. Instrumental music education students must enroll in Music 011 for a minimum of one semester. All junior and senior students with a major or minor in music must maintain satisfactory membership every session in one of the above ensembles, or in one of the following: Music 341, 346, or 414. Students are exempt from this requirement during the session of student teaching. Students also may elect additional large or small ensembles, not to exceed three in any one session.

Each student with a major or minor in music must designate a principal applied field and complete the credits specified within the selected specialization. Changes in the principal applied field are permissible so long as the student accumulates the required credit total and meets the required level of proficiency.

Credits in one's principal applied field are based on private lessons with a member of the faculty, weekly participation in Studio Hour (Mondays, at 10:00 a.m.), and recorded attendance each semester at seven campus recitals or concerts, approved for the purpose by the School of Music faculty, in which the student is not a participant. Students who fail to fulfill either the Studio Honor or attendance at campus recitals or concerts requirements will receive a grade of Incomplete, which can be removed only by making up the deficiency during the ensuing semester. A student who wishes to attempt the performance specialization in applied music must have prior approval of the appropriate faculty jury, and thereafter enrolls for and receives two lessons per week for 4 credits per semester.

A student may elect private instruction in a second field or fields, but this is for

one credit per semester since the studio hour and recital attendance requirements pertain only to the principal applied field.

Students not majoring or minoring in music may elect private applied music instruction if they can exhibit sufficient ability, they are participating simultaneously in one of the University performing groups, and faculty loads will allow. Registration is at one credit per semester, with no studio hour or recital attendance requirement. Those wishing such instruction should arrange for an interview and audition with the appropriate instructor.

Students specializing in music education should apply for admission to the Teacher Education Program as soon as they have accumulated 30 semester hours of credit. After being admitted, they must complete a series of specific requirements in order to qualify for student teaching and for the Illinois teaching certificate. Additional information is given under Education, Professional Education Experiences, and Curriculum, Instruction, and Media in this chapter.

Upper Division Examination

All Bachelor of Music degree students must pass an upper division examination in order to be admitted into the second half of the music curriculum. It is normally taken before finishing 60 hours of academic study and in the second semester of Music 240. A student must pass the upper division examination before enrolling in Music 321, 322, 357a, 357b, and 340 level of applied music. Transfer students will have conditional enrollment in these courses with the exception that applied music enrollment shall be at the 240 level. The upper division examination for transfer students is taken at the end of the first semester at Southern Illinois University at Carbondale.

The upper division examination consists of an applied music jury performance before the entire music faculty as well as an interview with an appropriate faculty committee. Students will provide a complete repertoire list at the time of the jury. The purpose is to ascertain the appropriateness of the student's choice of music curriculum as well as to give counsel regarding the student's potential for future professional development.

Financial Information

Special grants and awards are available to students enrolled in the School of Music who are qualified and in need of financial assistance. Opportunities for employment in the student work program are excellent. In addition, there are scholarships (tuition awards) and loan programs available through the Office of Student Work and Financial Assistance.

Beyond the general university tuition and fees, there are no additional charges for music lessons or use of practice rooms, nor for rental of instruments used in classes or performing groups; however, students are responsible for purchase of their own textbooks, solo literature, and incidental supplies for music lessons and classes. Such costs normally range from $20 to $50 per semester.

Bachelor of Music Degree, College of Communications and Fine Arts

General Education Requirements	45
Including Music 102 and 105a as GE-C substitutes	
Requirements for Major in Music	75
Theory: Music 104a,b; 105a,b; 204; 205; 207; 321; 322[1]	(3)[2] + 16
History-Literature: Music 102; 357a,b[3]	(2)[2] + 6
Major performing ensembles (8 semester)	8[4]
Partial Recital: Music 398	1
Beginning Piano: Music 030 (or waiver by examination)	4[5]
Specialization (see below)	40
Total	120

MUSIC MAJOR — PERFORMANCE SPECIALIZATION, INSTRUMENTAL (STANDARD ORCHESTRAL AND BAND INSTRUMENTS, AND GUITAR)

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 407, 421, 461,or any of 470 series	6
Approved music electives	4
	40

MUSIC MAJOR — JAZZ PERFORMANCE SPECIALIZATION

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 324, 331, 430	3
Approved music electives to be chosen from 280, 321, 322, 421, 461, or, if the principle field is woodwind, 2 additional hours for secondary instrument must be completed	5
Music 365	2
	40

MUSIC MAJOR — PERFORMANCE SPECIALIZATION, KEYBOARD (PIANO, ORGAN, AND HARPSICHORD)

Music 030 not required[5]	
Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 461	3
Music 407, 421, or any of 470 series	4
Music 341	3
	40

MUSIC MAJOR — PERFORMANCE SPECIALIZATION, VOICE

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 407, 421, 461, or any of 470 series	4
Approved foreign language, 2 semesters	(4)[2] + 4
Music 363	2
	40

MUSIC MAJOR — PIANO PEDAGOGY SPECIALIZATION

Music 140-440, principal field, 8 semesters	28
Music 498	2
Music 461, 479, 499	10
	40

MUSIC MAJOR — MUSIC THEORY-COMPOSITION SPECIALIZATION

Music 140-340, principal field, 6 semesters	12
Music 407, 421	4
Music 280	4
Music 480, 481, or 499	8
Music 470 series	5
Approved music electives, 300 level or above	7
	40

MUSIC MAJOR — MUSIC BUSINESS SPECIALIZATION

General Education Requirements	45
Including Music 102 and 105a as GE-C substitutes	
Requirements for Major in Music with Music Business Specialization	75
Accounting 220, 230	6

Administrative Sciences 304	3
Economics 215	3
Finance 271	3
Marketing 304, 363, 401, 438	12
Music 104a, b, 105a, b	8
Music 305	2
Music 324	1
Music 374, 375	6
Music 420	1-2
Music 040-240, 4 semesters	4-8
Music 030, 2 semesters (or waiver by examination)	2
Music 031 (or waiver by examination)	1
Six semesters chosen from 011, 013, 014, 017, 020, 021, 022	6
Music 032-1, 033-1, 034-1, 035-1, 036-1	5
Music electives	7-12
Electives selected from GE-A 101, Music 036, Music 373, Physics 325, 355, or intern-cooperative training.	
Total	120

Bachelor of Music Degree, College of Communications and Fine Arts or Bachelor of Music Education Degree, College of Education

MUSIC MAJOR — MUSIC EDUCATION SPECIALIZATION[4]

General Education Requirements	45
Including GE-B 202, GE-B 212 or 300, and Music 102 and 105a as GE-C substitutes	
Requirements for Major in Music	57
Theory: Music 104a,b; 105a,b; 204, 205; 207; 321; 322	(3)[2] + 16
History-Literature: Music 102, 357a,b	(2)[2] + 6
Major performing ensembles, 7 semesters[2]	7
Music 140-340, principal field, 6 semesters	12
Music 398	1
Music 031 (or waiver by examination)	1
Music 304	2
Music education specialization	12
Music 030[3]	2
Music 032, 033, 034, 035	4
Music 305, 318, 324	6
Or	
Music 030	4
Music 317, 325	4
Music 306 or 032-036 series	2
Music 363	2
Professional Education Requirements	24
See Teacher Education Program, page 66.	
Music 304 and 306 substitute for Education 312.	
Total	126

[1] In the jazz performance specialization, Music 373 and three additional hours approved by the School of Music are required as substitutes for Music 321 and 322.
[2] GE-C substitutes.
[3] In the jazz performance specialization, Music 357a or b and Music 372 are required.
[4] Exception for performing ensembles in music education specialization. In the jazz performance specialization only, jazz ensemble is a major performing ensemble in the junior and senior years.
[5] Exceptions for Music 030 and consequent credit hour adjustment in keyboard performance and instrumental music education specialization.

Bachelor of Arts Degree, College of Communications and Fine Arts

The Bachelor of Arts degree is individually tailored to meet the needs and educa-

tional goals of each student pursuing it. Of the 40 hours in music necessary to complete this degree, required courses are Music 102, 104a, b, 105a, b; four semesters of 140, eight hours; performing ensembles, four semesters, four hours. The remainder of the music courses necessary to complete the degree program are selected by the student in consultation with the School of Music adviser and faculty sponsor. This planning is done during the first semester. Changes may be made if agreed upon by the student, the School of Music adviser and the student's faculty sponsor. Students must comply with the studio hour and recital attendance requirements listed under general requirements in music.

Minor

The minor in music includes Music 102, 030a,b, 104a,b, 105a,b, 357a,b; two semesters of performing ensembles, two hours; and two semesters of 040 or 140, four hours for a total of 24 credits. Students must comply with the studio hour and recital requirements listed above.

Courses

011-1 to 8 (1 or 2, 1 or 2, 1 or 2) Marching Salukis. Fall semester only. Open to all students with experience in bands. Performs at all home football games, and one or two away. Counts as a "major ensemble," one of which must be taken each semester by resident music majors.
012-1 to 4 (1, 1, 1, 1) Laboratory Band. Spring semester only. Open to all students with experience in bands. Opportunity to extend experience on one's secondary instrument, if desired. Performs at all home basketball games and functions as laboratory group for conducting students.
013-1 to 16 (1 or 2 per semester) Symphonic Band. Open to all students with experience in bands. Performs standard literature. Two or three concerts per year. Counts as "major ensemble," one of which must be taken each semester by resident music majors.
014-1 to 16 (1 or 2 per semester) Concert Wind Ensemble. A select group which performs advanced contemporary literature. Three concerts and tour per year. Counts as a "major ensemble," one of which must be taken each semeser by resident music majors. Prerequisite: audition prior to first registration.
015-1 to 16 (1 or 2 per semester) Jazz Ensemble. For students experienced with popular literature. Concerts and tours when feasible. Prerequisite: audition prior to first registration.
016-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Brass and Percussion Ensemble. A select group, performing literature scored for this instrumentation. Two or three concerts per year and tour as feasible. Prerequisite: audition prior to first registration.
017-1 to 16 (1 or 2 per semester) Symphony. Open to all experienced string, woodwind, brass, and percussion players. Plays standard and advanced orchestral literature, performs three or four concerts per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration.
019-1 to 4 (1, 1, 1, 1) Laboratory Orchestra. Spring semester only. Open to all experienced string, woodwind, brass, and percussion players with consent of instructor. Performs opera and orchestral-choral works.
020-1 to 16 (1 to 2 per semester) University Chorus. Open to all students who desire to sing. Study and performance of major choral-orchestral literature. Two concerts per year. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. No audition required.
021-1 to 16 (1 or 2 per semester) S.I.U. Chorale. Open to all experienced singers. Emphasis on advanced contemporary literature. Three or four concerts per year and tours as feasible. Counts as a "major ensemble," one of which must be taken each semester by resident music majors.
022-1 to 16 (1 or 2 per semester) University Choir. A select group which performs advanced choral literature of all eras. Three or four concerts per year and tours as feasible. Counts as a "major ensemble," one of which must be taken each semester by resident music majors. Prerequisite: audition prior to first registration, and each succeeding fall.
023-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Southern Singers. Open to all experienced singers. Emphasis on light, popular literature. Two or three appearances per year.
024-1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Male Glee Club. Open to all male students who desire to sing. Serious and lighter glee club material. Frequent appearances on and off campus.
030-4 (1, 1, 1, 1) Piano Class. **(a)** Level 1, **(b)** level 2, **(c)** level 3, **(d)** level 4. Designed to develop functional command of basic keyboard skills needed in the further study of music and the teaching of music. Take in sequence unless assigned advanced placement by instructor. Prerequisite: major or minor in music, elementary education, early childhood education, or consent of instructor.

031-2 (1, 1) Voice Class. (a) Level 1, (b) level 2. Designed to develop functional command of basic vocal skills needed in teaching music. Prerequisite: consent of instructor.
032-2 (1, 1) String Techniques Class. (a) Upper strings; (b) lower strings. Designed to develop essential techniques and principles which can be used in teaching young string pupils. Prerequisite: music major or minor.
033-4 (1, 1, 1, 1) Woodwind Techniques Class. Flute, clarinet, oboe, bassoon. Designed to develop essential techniques and principles which can be used in teaching young woodwind pupils. Students may begin on one instrument and shift to another at midterm, or they may continue with the same instrument with the consent of the instructor. Prerequisite: music major or minor or consent of instructor.
034-2 (1, 1) Brass Techniques Class. Trumpet, french horn, trombone, tuba. Designed to develop essential techniques and principles which can be employed in teaching beginning brass pupils. Students may begin with one instrument and shift to another at midterm or they may continue with the same instrument with the consent of the instructor. Prerequisite: music major or minor.
035-1 Percussion Techniques Class. Designed to develop basic techniques and principles which can be employed in teaching young percussion pupils. Prerequisite: music major or minor.
036-2 (1, 1) Guitar Class. (a) Level 1, (b) level 2. Designed to develop basic techniques and principles which can be employed in teaching music. Prerequisite: major or minor in music, elementary education, or early childhood education, or consent of instructor.
040, 140, 240, 340, 440, 540-1, 2, or 4 Applied Music. Offered at six levels in the areas listed below. May be repeated for credit as long as passing grade is maintained. Student must be concurrently enrolled in one of the performing groups. Prerequisite for 040: satisfactory completion of beginning class instruction offered in that area, or the equivalent. Prerequisite: for 140: three or more years of prior study or performing experience, or two semesters of *C* or better at 040 level. Prerequisite: for 240, 340: two semesters of *C* or better at previous level, or consent of applied jury. Prerequisite: for 440, 540: two semesters of *B* or better at previous level, or consent of applied jury. Music majors and minors enroll for two credits on their principal instrument, taking one half-hour private lesson and studio class, Mondays at 10:00. Those with prior approval by their applied jury for the specialization in performance enroll for four credits, taking two half-hour private lessons and the student class each week. Non-music majors or minors, and those music majors taking a second instrument, enroll for one credit, taking one private or class lesson per week. Six hours of individual practice per week required for each lesson. For shorter sessions, credit is reduced or lesson time is increased proportionately.

a. Flute
b. Oboe
c. Clarinet
d. Bassoon
e. Saxophone
f. Horn
g. Trumpet
h. Trombone
i. Baritone
j. Tuba
k. Percussion
l. Violin
m. Viola
n. Cello
o. String bass
p. Voice
q. Piano
r. Organ
s. Harpsichord
t. Guitar
u. Recorder
v. Coaching

101-3 Music Fundamentals. Rudiments of music for those with little or no musical background. One lecture and one piano laboratory session per week. Provides basic music vocabulary and keyboard competency for 300, 301, 302, and 303.
102-2 Survey of Music Literature. Characteristic forms and styles. Analysis and listening. Examples from the leading composers of each era. Prerequisite: music major or minor.
104-2 (1, 1) Aural Skills. A laboratory course designed to complement 105a and b. Practice in recognition and singing of basic pitch and rhythm materials, and their realization in standard musical notation. For those planning a major or minor in music, take a and b in sequence, or, with prior consent of instructor, concurrently.
105-6 (3, 3) Basic Harmony. Study of traditional diatonic tonal materials and standard notational practice. Includes keyboard skills. For those with performing experience and planning a major or minor in music. Take a and b in sequence. Prerequisite: concurrent registration in 104 and 030, or equivalent aural and keyboard skill.
107-1 Applied Harmony for Fretted Instruments. Application of basic harmonic functions to the fretted instruments including guitar. Prerequisite: concurrent enrollment in guitar (140-540t) or consent of instructor.
140-1, 2, or 4 Applied Music. (See 040.)
204-1 Advanced Aural Skills. Continuation of 104. Designed to complement 205. Prerequisite: 104b.
205-3 Advanced Harmony. Study of chromatic tonal materials, including keyboard skills. Prerequisite: 104b and 105b, and concurrent registration in 204.
207-2 Contrapuntal Techniques. Basic contrapuntal principles and skills, especially as applied to 18th and 19th century styles. Extensive writing practice, and analysis of stylistic

models. Introduction to major contrapuntal forms. Prerequisite: 205 and 204, or take 204 concurrently.

240-1, 2, or 4 Applied Music. (See 040.)

250-3 The History and Literature of the Guitar and Related Fretted Instruments. A survey of the history and literature of the guitar and related fretted instruments from the Renaissance to the present with emphasis on interpretation.

257-12 Intern-Work Experience. Practical experience in music retailing, wholesaling, and publishing under the supervision of professional firms. Open only to candidates for the Bachelor of Music degree with emphasis in music business.

280-2 to 4 (2, 2) Beginning Composition. Application of contemporary compositional techniques. Prerequisite: 105b or consent of instructor.

300-2 Teaching Music in the Primary Grades. For non-music majors only, who may be expected to teach music in grades K-3. Methods and materials for instruction. Prerequisite: 101 or equivalent.

301-2 Teaching Music in the Intermediate Grades. For non-music majors only, who may be expected to teach music in grades 4-6. Methods and materials for instruction. Prerequisite: 101 or equivalent.

302-2 Music in Special Education. For non-music majors only, with an interest in pursuing a career in special education. Prerequisite: 101 or equivalent.

303-3 Music for Pre-Schoolers. Methods and materials for teaching music to pre-school children. Recommended for majors in the Department of Child and Family and in early childhood education. Prerequisite: 101 or equivalent.

304-2 The General Music Program. A survey of problems and methods in teaching music in the schools, with scheduled observations of school music programs in operation. Special attention to the teaching of comprehensive musicianship through the general music program in the junior high school. Prerequisite: admission to teacher education program.

305-2 Instrumental Music in the Schools. Administration of the school instrumental music program. Emphasis upon teaching instruments and the management and instruction of instrumental organizations. Prerequisite: 304.

306-2 Music Specialist in the Elementary Schools. Principles and methods employed in supervising and teaching the elementary school music program. Designed for music majors and minors. Prerequisite: 304.

317-3 Choral Conducting and Methods. Score reading, baton techniques, and rehearsal techniques, organization and management problems of school choral groups. Prerequisite: music major or minor and junior standing.

318-3 Instrumental Conducting. Score reading, baton techniques, and rehearsal management. Supervised application in ensemble. Prerequisite: music major or minor and junior standing.

321-2 Form and Analysis. Comprehensive study of harmonic and formal structures and typical stylistic traits of 18th and 19th century music. Prerequisite: 204 and 207.

322-3 Principles of 20th Century Music. Comprehensive study of harmonic techniques and other stylistic traits of major 20th century idioms. Prerequisite: 321.

324-1 Instrumental Arranging. Practice in scoring of transcriptions, arrangements, and original compositions for standard instrumental groups. Prerequisite: 205.

325-1 Choral Arranging. Practice in scoring arrangements and/or original compositions for choral groups. Prerequisite: 205.

331-1 Jazz Improvisation. Ear training, phrasing in extemporaneous playing, use of chord symbols and chord progressions, special effects peculiar to jazz playing and styles of playing. Prerequisite: 205.

340-1, 2 or 4 Applied Music. (See 040.)

341-1 to 8 (1 or 2 per semester) Accompanying Laboratory. Experience, under supervision, in accompanying soloists and groups. Counts as a "major ensemble" for juniors and seniors.

346-1 to 16 (1 or 2 per semester) Opera Workshop. Open to all experienced singers and stage technicians. Performs one major work and two or more excerpt programs per year. Normal registration is for two credits; four credits with permission for those with major roles; eight credits for full-time summer workshop. Counts as a "major ensemble" for juniors and seniors.

347-1 to 12 Music Theater Workshop. For experienced singers, actors, dancers, and instrumentalists. Normally offered during summer as a full-time course, for eight credits, or one credit per show for the orchestral players. Three or four musicals are rehearsed and presented. Prerequisite: audition.

357-6 (3, 3) Music History. Study of musical examples and techniques evolving from the ancient period to the present. May take a or b in either order. Prerequisite: 102 and junior standing.

363-2 (1, 1) Pronunciation and Diction for Singers. (a) English and French, (b) German and Italian. Establishment of proper pronunciation as applied to vocal literature. Prerequisite: one or more semesters of private or class voice instruction. Elective Pass/Fail.

364-2 The Alexander Technique of Body Control. A controlled discipline to counteract

tension habits that are harmful to correct use of the body, particularly as they relate to music, speech, dance, and theater.

365-1 to 48 Chamber Music. Groups of two to sixteen performers as organized and sponsored by individual faculty members. Includes duo-piano teams, and piano in combination with other performers. Regular weekly rehearsals of appropriate music and public performance as feasible. Section (g) counts as a "major ensemble", one of which must be taken each semester by resident music majors, specializing in classical guitar and, if accepted by audition, by juniors and seniors whose principal instrument of study is the classical guitar.

a. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-Vocal.
b. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-String.
c. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-Woodwind.
d. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-Brass.
e. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-Percussion.
f. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-Keyboard.
g. 1 to 8 (1, 1, 1, 1, 1, 1, 1, 1) Chamber Music-Classical Guitar.

370-2 American Folk Music. American folk music from its foreign heritage to its current manifestations.

372-3 The Music of Black Americans. (Same as Black American Studies 362.) The study of the music created and produced by black people in the United States. Content ranges from work songs and spirituals through contemporary classical music. Although jazz is not ignored, primary focus is on other styles and genres. Some emphasis upon the environmental forces which shaped the music. Historically oriented.

373-3 Rock and Pop Music. Study of "rock" and other popular American music. Evolution of both black and white folk music is shown. Rock is studied as the merging of aspects of these two folk mainstreams. Major figures in rock are studied. Lectures, "live" and recorded demonstrations, films, and individual projects will be used.

374-3 Music Merchandising I. A study and investigation of domestic and international copyright protection, the publishing and distribution of music, and investigation of recorded music. Prerequisite: sophomore standing and permission of instructor.

375-3 Music Merchandising II. Continuation of 374, emphasizing continued study of the record industry, performed music and performance rights, musical instruments manufacture, and an investigation of wholesale and retail procedures. Prerequisite: 374.

398-1 to 2 (1, 1) Partial Recital. Preparation and presentation of a partial recital in any applied field. Prerequisite: prior or concurrent registration in 340 and approval of applied jury.

399-5 (1, 1, 1, 1, 1) Graduate Preparatory Seminar. **(a)** Music analysis, **(b)** Aural techniques, **(c)** Pre-Baroque, **(d)** Baroque and Classical, **(e)** Romantic and Modern. Designed to supply understanding and skills where deficiencies have been shown by the graduate proficiency examinations in music. Part or all may be taken in any sequence. Prerequisite: prior assignment by graduate committee in music.

400-1 to 2 (1, 1) Peformance Techniques. Individual instruction in any secondary applied field. Designed to provide added depth of preparation for teaching instrumental and vocal music. Prerequisite: completion of 340 level or the equivalent in some field of applied music.

407-2 Modal Counterpoint. Study of Renaissance contrapuntal techniques. Extensive writing practice, and analysis of stylistic models. Prerequisite: 207.

414-1 to 8 (1 to 2 per semester) Collegium Musicum. For experienced singers and instrumentalists. Emphasis upon practical study of historical music literature of the Medieval, Renaissance, and Baroque eras. Counts as a "major ensemble" for juniors and seniors.

420-1 to 2 (1, 1) Instrument Repair. A shop-laboratory course dealing with the selection, tuning, adjustment, maintenance, and repair of musical instruments.

421-2 Advanced Analysis. Structure, form, and design in music as the coherent organization of all of its factors. Analysis of works chosen from a variety of styles and genres. Prerequisite: 321.

430-1 Jazz Arranging. Methods of scoring for popular groups. Practice in scoring arrangements and/or original compositions for jazz ensembles. Prerequsite: 324 or prior consent of instructor.

440-1, 2, or 4 Applied Music. (See Music 040.)

447-4 (2, 2) Electronic Music. **(a)** Introduction to classical studio equipment and techniques; use of voltage controlled equipment. Individual laboratory experience available. **(b)** Emphasis upon creative projects, more sophisticated sound experimentation, and analysis. Enrollment limited. Must be taken in a,b sequence. Prerequisite: 280 or consent of instructor.

453-2 to 4 (2 per semester) Advanced Topics in Choral Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. For experienced teachers and advanced students.

454-2 to 4 (2 per semester) Advanced Topics in Instrumental Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

455-2 to 4 (2 per semester) Advanced Topics in Elementary School Music. Practicum in the selection and use of materials for the elementary school program. Study of techniques for achieving balanced musical growth. For experienced teachers and advanced students.
456-4 (2, 2) Music for Exceptional Children. (Same as Special Education 456.) (a) Theories and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar, and tuned and untuned classroom instruments. (b) Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Take in sequence. Prerequisite: 302 or prior consent of instructor.
460-3 Music Aesthetics and Appreciation. The significance of music for people. Critical theories in the writings of philosophers of music and art from Plato through Dewey and Cage are related to principles and methods for communicating an understanding of music in schools and in society.
461-3 Applied Music Pedagogy. Specialized problems and techniques employed in studio teaching of any particular field of musical performance. Study of music literature appropriate for the various levels of performance. Opportunity, as feasible, for supervised instruction of pupils. Meets with appropriate instructor, individually or in groups.
468-2 to 4 (2, 2) Music Productions. Practicum in the techniques for staging operas and musicals.
472-2 Chamber Music Literature. A study of literature for the principal types of chamber music groups.
475-3 Baroque Music. The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite, and concerto. Prerequisite: For undergraduate enrollment: 357a or b. For non-music majors: prior consent of instructor.
476-3 Classical Music. Development of the sonata, symphony, concerto, and chamber music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart, and Beethoven. Prerequisite: For undergraduate enrollment: 357a or b. For non-music majors: prior consent of instructor.
477-3 Romantic Music. Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: For undergraduate enrollment: 357a or b. For non-music majors: prior consent of instructor.
479-2 to 4 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and upon instructors scheduled. (a) piano literature, including an introductory study of harpsichord music; (b) organ literature, in relation to the history of the instrument; (c) song literature; (d) guitar and lute literature; (e) solo string literature; (f) solo wind literature.
480-2 to 4 (2, 2) Advanced Composition. Original composition involving the larger media. Individual instruction. Prerequisite: 280-2 to 4 or consent of instructor.
481-1 to 4 Readings in Music Theory. Assigned readings and reporting of materials pertaining to a particular phase of music theory in historical perspective. Approximately three hour's preparation per week per credit (adjusted for shorter sessions). Prerequisite: 321 and 322 or prior consent of instructor.
482-1 to 4 Readings in Music History and Literature. Assigned readings and reporting of materials pertaining to a particular phase of history or literature. Approximately three hours preparation per week per credit. Prerequisite: 357a and b, or prior consent of instructor.
483-1 to 4 Readings in Music Education. Assigned readings and reporting of materials pertaining to a particular phase of music education. Approximately three hours preparation per week per credit (adjusted for shorter sessions.)
498-2 to 4 (2, 2) Recital. Preparation and presentation of a full solo recital in any applied field. Prerequisite: prior or concurrent registration in 440 and approval of applied jury.
499-1 to 8 Independent Study. Original investigation of selected problems in music and music education with faculty guidance. Project planned to occupy approximately three hours preparation per week per credit (adjusted for shorter sessions). Prerequisite: prior consent of selected instructor.
500-1 to 6 Independent Investigation.
501-3 Music Bibliography and Research.
502-4 (2, 2) Analytic Techniques.
503-3 Scientific Evaluation and Research in Music.
509-2 History and Philosophy of Music Education.
535-2 Contemporary Idioms.
540-1, 2, or 4 Applied Music.
545-3 Pedagogy of Music Theory.
550-2 School Music Administration and Supervision.
556-2 to 4 (2, 2) Advanced Conducting.
566-1 to 12 (1 or 2 per semester) Ensemble.
567-1 to 8 Music Theater Workshop.
568-1 to 16 (1 to 8 per semester) Opera Workshop.
570-3 History of Opera.

573-3 Medieval Music.
574-3 Renaissance Music.
578-3 Twentieth Century Music.
580-2 to 4 (2, 2) Graduate Composition.
595-2 Music Document.
598-4 Graduate Recital.
599-2 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Nursing

(SEE ASSOCIATE DEGREE NURSING)

Nursing (Preprofessional Program)

The School of Nursing of Southern Illinois University at Edwardsville offers a program of study leading to a Bachelor of Science degree in nursing. The program is accredited by the National League of Nursing. The curriculum is designed to prepare qualified individuals to function competently as beginning professional nurse practitioners; to participate in providing a broad scope of health care in a variety of settings; to obtain a foundation for continued growth and graduate education. Professional nursing practice is broad in scope and serves individuals in a multiplicity of settings; thus the professional nurse functions in both traditional and non-traditional situations which may require conventional or innovative patterns of practice.

The first three semesters of the program may be completed at Southern Illinois University at Carbondale. During this time, the student must successfully complete all courses prerequisite to the nursing major. The student should then transfer to Southern Illinois University at Edwardsville. Admission to the university does not guarantee acceptance into the School of Nursing. Admission criteria for the school include (1) successful completion of prerequisite courses with grades of *C* or above, (2) minimum overall grade point average of 2.50, and (3) completed application on file in the School of Nursing within the time deadline. Students are admitted to the School of Nursing every quarter during the academic year. Information concerning required courses is available at the Undergraduate Academic Services Advisement Center in Woody Hall, Wing C.

Occupational Education

(SEE VOCATIONAL EDUCATION STUDIES.)

Paralegal Studies for Legal Assistants (Major)

The program leads to the Bachelor of Science degree in paralegal studies for legal assistants. It prepares the graduate to function as a paraprofessional in the legal profession and as a legal assistant in private practice, legal aid offices, or the law-related operations of business, industry, education, or government.

In overall philosophy as well as in curriculum content and format, the paralegal studies for legal assistants program is based on the proposed *Curriculum for the Training of Law Office Personnel* as stated by the American Bar Association Special Committee on Legal Assistants. The program has two components: a core of legal specialty, administration, and communication skills courses to provide

professional competency and a range of social science and humanities courses to provide the intellectual background for the student's future professional life including an understanding of law and its function in society.

Qualified students may be admitted to the Capstone program with a major in paralegal studies for legal assistants. The Capstone program is explained in Chapter 3.

Bachelor of Science Degree, College of Liberal Arts

General Education Requirements 45
Including GE-D 110 or 112.
Supplementary College Requirements (See Page 75) ..... (7) + 7
Requirements for Major in Paralegal Studies for Legal Assistants 54-55
Paralegal courses 27
Paralegal Studies for Legal Assistant 300 3
General law (Political Science 330 or Finance 370) 3
21 hours selected from the following: estates and trusts, business organizations, criminal law (Political Science 334), general law (Political Science 330 or Finance 370), Paralegal Studies for Legal Assistants 310, income taxation (Accounting 240 or 341), advanced taxation (Acounting 441), real estate (Finance 328), business law (Finance 271) or approved substitute, internship, Paralegal Studies for Legal Assistants 340. Students who take the internship, will be required to work 10 hours a week for one semester for each three hours of credit. A student may earn up to 12 hours of internship credit but may receive only three hours in the paralegal area.
Administration-related courses 9-10
Secretarial and Office Specialities 223 3
Computer Science 202, Electronic Data Processing 107, or Secretarial and Office Specialities 220 3-4
Accounting 210 or approved substitute 3
Liberal Arts courses 18
Two upper-division courses in one social science discipline and one humanities discipline. The remaining hours may be taken in either field. General education courses at the 300 level may be used.
Electives 13-14
Total 120

Courses

300-3 Introduction to Legal Analysis, Research and Writing. After examining the litigation process and the structure of federal and state court systems, students will be introduced to case and statutory analysis. Legal research techniques and citation form will be covered in depth. Several legal writing projects will be required, some of which will involve the use of the law library. The role of paralegals and ethical contraints on the profession will be discussed throughout the course.

310-3 Civil Procedure. Students will examine the lawyers' and paralegals' roles in handling civil cases, and the means by which the objectives of litigation may be achieved. Strategy and mechanics of civil procdure will be explored in depth, and students will be required to prepare a complaint, discovery requests, and initial appellate documents.

340-1 to 12 Internship in Paralegal Studies. Supervised on-the-job training and experience in public or private offices typically employing paralegals. Student must work ten hours per week for fifteen weeks for each three hours of credit. Only three hours of internship credit applicable to major requirements. Prerequisite: formal application from student, accompanied by letter or support from supervisor, and consent of coordinator of paralegal studies program.

Philosophy (Department, Major, Courses)

The student electing to major in philosophy should consult the department's director of undergraduate studies, who will then assign an adviser. Prospective students are advised to take at least one philosophy course at the 100 or 200 level.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	45
Supplementary College Requirements (See Page 75)	(4) + 8-14
Requirements for Major in Philosophy	28
Philosophy 304 and 305	6
At least two of the following: Philosophy 300, 306, 320, 340, 342	6
At least two 400-level philosophy courses	6-8
Philosophy electives to complete 28 hours, 6 of which may be selected from the 100 and 200 level	8-10
Minor	15
Electives	18-24
Total	120

Minor

A minor in philosophy requires 15 hours, 6 of which may be selected from philosophy courses offered at the 200 level and 6 of which should be selected from the courses listed above for the major. Philosophy 304 and 305 are recommended.[1]

Honors

Honors in philosophy will be granted to eligible majors who successfully complete two semesters of Philosophy 397, maintain a 3.25 average in philosophy and a 3.00 overall grade point average, and have their written work in one Undergraduate Philosophy Seminar approved by a faculty committee.

[1]Students completing a minor in philosophy for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

Courses

200-3 Types of Philosophy: An Introduction. Survey of the traditional branches and problems of philosophy, such as religion, metaphysics, epistemology, ethics, political theory, aesthetics, and history. Elective Pass/Fail.

202-3 Philosophical Perspectives on Death and Dying. The great philosophers of East and West are studied on pressing questions such as the definitions of death, personhood, and human value; the right to die and to kill; treatment of human dead and dying; and whether life after death is conceptualizable or ethically important.

206-3 Philosophies of the Person. A survey and examination of selected theories of human nature, beginning with ancient and medieval philosophies and continuing into modern times with some consideration of scientific and ideological accounts. Elective Pass/Fail.

242-3 Morality and Law. An introduction to the moral issues raised and resolved by law creation and adjudication by legislators, judges, and administrative agencies at the state, national, and international level.

245-3 Sexual Morality. An examination of the relationship between various sexual practices and morality, including an examination of the functions of sex and the relationship between sex and love. Discussions will include such issues as monogamy, premarital sex, homosexuality, and rape. Elective Pass/Fail.

260-3 Philosophy and Literature. An exploration of leading philosophical themes and issues in significant works of literature, the course seeks to discover in what manner the literary medium contributes uniquely to our understanding of humanity in relation to the world.

275-2 Environmental Ethics. A consideration of alternative views about our relations to nature and the obligations, if any, that we have toward nature, future generations of people,

and people in other countries. Examples from contemporary controversies about nuclear power, wilderness areas, etc., will be used to illustrate the views in question.
290-2 to 5 Special Problems. Individual or small group study of topics mutually agreed to by an instructor and students. Special topics announced from time to time. Students are invited to suggest topics.
300-3 Elementary Metaphysics. Presentation of answers to the most general problems of existence. An attempt to unify all scientific approaches to reality through the laying down of common principles. Elective Pass/Fail.
301-3 Philosophy of Religion. (Same as Religious Studies 301.) An analysis of problems in the psychology, metaphysics, and social effects of religion. Among topics discussed are the nature of mystical experience, the existence of God, and problems of suffering, prayer, and immortality. Elective Pass/Fail.
304-3 Ancient Philosophy. Survey of western philosophy from the pre-Socratics, Plato, and Aristotle through the Middle Ages. Elective Pass/Fail.
305-3 Modern Philosophy. A survey of western philosophy from Bacon and Descartes through Kant. Elective Pass/Fail.
306-3 Nineteenth Century Philosophy. Survey of 19th century European philosophy. Topics to be selected from the following: Hegel's philosophy; the subsequent reactions to Hegelianism in the forms of positivism, Marxism, and existentialism; British utilitarianism and idealism; neo-Kantian philosophies; and evolutionist philosophies. Elective Pass/Fail.
313-3 Classical Chinese Philosophy. Historical and comparative study of Confucianism, Taosim, Maoism, and Legalism. Elective Pass/Fail.
314-3 Modern Chinese Philosophy. Historical and comparative study of Mahayana Buddhism, Neo-Confucianism, and Maoism. Elective Pass/Fail.
320-3 Deductive Logic. Main forms of deductive inference. Emphasis on the use of the symbolism of modern logic to evaluate inferences. Elective Pass/Fail.
340-3 Ethical Theories. Nature of ethics and morality, ethical skepticism, emotivism, ethical relativism, and representative universalistic ethics. Bentham, Mill, Aristotle, Kant, Blanshard, and Brightman. Elective Pass/Fail.
342-3 Legal and Social Philosophy. Discussion of contemporary institutions designed to achieve socially desirable goals (e.g., guaranteeing equality of opportunity, protecting individual liberties, assuring a fair distribution of wealth, minimizing violent behavior) and the philosophical theories that serve as the foundation for the continued existence or reform or abolition of these institutions (e.g., the theories of Hobbes, Marx, Mill, and Marcuse). Elective Pass/Fail.
344-3 The Biomedical Revolution and Ethics. Changes in biology and medicine have brought into sharp focus such problems as allocation of scarce medical resources, use of human subjects in experiments, abortion, euthanasia, genetic screening, truth-telling in medical practice, moral rights of patients and other matters. This course brings ethical principles to bear on these issues.
355-3 Philosophy of Education. (See Educational Leadership 354.) Elective Pass/Fail.
371-3 Introduction to Contemporary Phenomenology. Introductory survey of individual thinkers and questions in the contemporary phenomenological tradition: Husserl, Sartre, Merleau-Ponty, Levinas, and Ricoeur. Elective Pass/Fail.
375-3 Philsophical Foundations of Ecology. Study of the conceptual foundations of the ecological or environmental outlook, the differences that may exist between those foundations and other philosophical frameworks, and the possible changes in general patterns of thought that may result from the increasing importance and widening application of ecological sciences. Elective Pass/Fail.
378-3 Introduction to Marxist Theory. An introduction to Marxist historical method and its effects on social theory, politics, aesthetics, literary criticism, psychology, philosophy, and economics. Classical texts from Lukacs to Althusser and examinations of critical questions in the social sciences provide the topics of the course.
389-3 Existential Philosophy. Surveys the two main sources of existentialism, the life philosophies of Kierkegaard and Nietzsche and the phenomenology of Husserl, and introduces the major philosophical themes of representative thinkers: J.P. Sartre, M. Heidegger, G. Marcel, and others. Elective Pass/Fail.
397-8 (4,4) Undergraduate Philosophy Seminar. Small group discussion of topics in philosophy.
400-3 Philosophy of Mind. An investigation of the philosophic issues raised by several competing theories of mind, focusing on the fundamental debate between reductionistic accounts (e.g., central state materialism, identity theories of the physical and mental) and views which reject such proposed reductions. Traditional and contemporary theories will be examined. Designed for students in the life and social sciences with little or no background in philosophy as well as philosophy students. Elective Pass/Fail.
415-3 Logic of Social Sciences. (Same as Sociology 415.) Logical and epistemological examination of the social sciences as types of knowledge. Basic problems in philosophy of

science with major emphasis upon social science: relationship of theory to fact, nature of induction, nature of causal law, testability, influence of value judgments, etc. Intended for students with considerable maturity in a social science or in philosophy. Elective Pass/Fail.
420-3 Advanced Logic. Study of topics in logical theory and/or formal logic not treated in 320. Prerequisite: 320. Elective Pass/Fail.
425-3 Philosophy of Language. (Same as Speech Communication 465.) Introduction to basic problems in the philosophy of language, including alternative theories of meaning and reference and the relation between meaning and intention. Elective Pass/Fail.
430-3 Epistemology. An introduction to basic problems in epistemology, including the nature, sources, and units of knowledge, the debates concerning foundationalism, correspondence versus coherence theories of truth and perception. Elective Pass/Fail.
435-4 Scientific Method. Critical survey of influential descriptions of scientific method, with emphasis on natural sciences. Topics include statistical and inductive probability, crucial experiments, explanation and prediction, interpretation of scientific terms and sentences, role of reasoning in discovery, and value judgments in research. Elective Pass/Fail.
441-4 Philosophy of Politics. (Same as Political Science 403.) Some of the central problems of modern political life, such as sovereignty, world government, authority and consent, the relation of economics and social studies to political theory. Prerequisite: 340 or GE-C 102 or consent of instructor. Elective Pass/Fail.
443-4 Philosophy of History. Classical and contemporary reflections on the nature of history and historical knowledge as the basis for dealing with the humanities. Prerequisite: consent of instructor. Elective Pass/Fail.
446-3 Philosophical Perspectives on Women. (Same as Women's Studies 456.) Survey of five different views of the relation of the concept of women to the philosophical concept of Human Nature. Elective Pass/Fail.
460-4 Philosophy of Art. The definition of art, its relation to science, culture and morals; the various types of art defined. Familiarity with at least one of the fine arts is assumed. Elective Pass/Fail.
470-6 (3, 3) Greek Philosophy. (a) Plato; (b) Aristotle. Prerequisite: 304 or consent of instructor. Elective Pass/Fail.
471-4 Medieval Philosophy. Prerequisite: 304 or consent of instructor. Elective Pass/Fail.
472-4 The Rationalists. Study of one or more of the following: Descartes, Malebranche, Spinoza, Leibniz, Wolff. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.
473-6 (3, 3) The Empiricists. (a) Locke; (b) Hume. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.
474-9 (3, 3, 3) 19th Century Philosophers. (a) Kant; (b) Hegel; (c) Marx. Prerequisite: 306 or consent of instructor.
475-3 Chinese Philosophy. Confucianism, Taoism, or Buddhism. Emphasis on comparison of philosophy East and West. Elective Pass/Fail.
482-3 Recent European Philosophy. Philosophical trends in Europe from the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism, and other developments. Language, history, culture and politics. Elective Pass/Fail.
486-3 Early American Philosophy. From the Colonial period to the Civil War. Elective Pass/Fail.
487-3 Recent American Philosophy. Thought of realists, idealists, and pragmatists, such as Royce, Santayana, Peirce, James, Dewey, and others. Elective Pass/Fail.
490-2 to 8 Special Problems. Hours and credits to be arranged. Courses for qualified students who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics. Prerequisite: consent of department.
491-1 to 3 Undergraduate Directed Readings. Supervised readings for qualified students. Open to undergraduates only. Prerequisite: consent of instructor.
496-2 to 4 Independent Studies in Classics. (See Classics 496.) Elective Pass/Fail.
500-3 Metaphysics.
501-3 Philosophy of Religion.
503-3 Philosophical Ideas in Literature.
515-3 Theory of Nature.
524-6 (3, 3) Analytic Philosophy.
528-3 Social and Economic Philosophy.
530-3 Theory of Knowledge.
531-3 Whitehead.
542-3 Political and Legal Philosophy.
545-3 Ethics.
560-3 Aesthetics.
562-3 Philosophy of Human Communication.
570-3 American Idealism.

575-3 to 9 (3 per topic) Contemporary Continental Philosophy.
577-6 (3, 3) Pragmatism.
581-3 Plato.
582-3 Aristotle.
587-3 Kant.
588-3 Hegel.
590-2 to 12 (2 to 4 per topic) General Graduate Seminar.
591-1 to 16 Readings in Philosophy.
595-2 Teaching Philosophy.
599-2 to 6 Thesis.
600-3 to 32 (3 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Photographic Production Technology (Program, Major)

The photographic production technology program in the School of Technical Careers is a two-year program recognized by Photo Marketing Association International.

Technical photographic courses are designed to prepare students as photographic laboratory technicians or photo finishers in industrial and commercial photographic processing agencies. Emphasis is placed on quality black and white and color photographic processes and materials. Students will study photographic techniques in lecture/laboratory sessions and tour industrial and commercial photographic processing agencies to obtain practical understanding of commercial systems. The student should expect to invest approximately $600 for the production of a portfolio and for the purchase of special photo chemicals and supplies. Students are to provide their own fully adjustable cameras.

The following representatives of the profession serve on an advisory committee which helps to keep the program responsive to the needs in the field. Current advisers are: Oscar Fisher, president, Oscar Fisher Company, Newburgh, N.Y., Sam Fox, president, Ethol Chemical Company, Chicago, Ill.; Don Beyer, director, photographic services, Standard Oil, Chicago, Ill; David Goldstein, president, D.O. Industries, Rochester, N.Y.; Jeannie Krettler, photographic department, Television City, Los Angeles, Ca.; Dale Plank, president, Plant Photographic, Inc., St. Charles, Mo.

Students will find job opportunities throughout industry for quality technicians. Graduates are limited only by their own talent, motivation, and willingness to move to where jobs are available. Job pay is directly commensurate with the technician's ability, resourcefulness, and drive.

A minimum of 64 credit hours is required for the major in photographic production technology. This associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Photographic Production Technology

GE-A 106	3
GE-D 101, 152	6
Finance 305	3
Electronic Data Processing	3
Secretarial and Office Specialities 100	2
School of Technical Careers 105a	2
Photographic Production Technology 111, 113, 115, 209, 211, 215, 221, 251a,b	46
Total	65

Courses

109-2 Illustration and Product Photography. An introductory photography course specifically designed for commercial graphics — design majors. Instruction which will emphasize product photography will include a study of camera controls, films, and lighting techniques. Polaroid film will be the primary photographic material used in this course. Lecture one hour, lab four hours.
111-4 Photo Processing I. Introduction to photo processing via the medium of black and white photography. Students will receive extensive darkroom work, film processing chemistry, and technical photographic assignments essential to the production of quality black and white prints. Lecture two hours, lab four hours.
113-4 Photo Processing II. An introduction to sensitized materials, processing techniques and quality control procedures in common use within the photofinishing industry. Students will perform basic sensitometric and quality control procedures to a variety of black and white and color material.
115-4 Photo Equipment Operation. An introduction to the equipment and operation of commercial photofinishing labs. Students will gain experience in operation, maintenance and troubleshooting on various types of processing and printing equipment. Lecture two hours, lab four hours.
209-4 Graphics for Photography. Students will develop basic skills in print finishing, retouching and restoration for black and white and color materials. The course is designed to acquaint students with current techniques and processes used by commercial processing labs. Lecture two hours, lab four hours.
211-6 Photo Processing III. Color reversal material. An advanced course dealing with material. Students will be involved with processing and finishing techniques common to the photofinishing industry. Lecture two hours, lab six hours. Prerequisite: 113 and 115.
215-6 Photo Processing IV. Students will process and print color negatives using commercial lab techniques. Emphasis will be placed on quality control in film processing, chemical replenishing, and distribution of final product. Lecture three hours, lab six hours.
221-6 Photo Processing V. Advanced black and white photo processing. Students will refine skills necessary for quality film processing and printing requirements of both small individual photo labs and commercial labs. Emphasis will be on methods essential to meet specialized customer requirements. Lecture three hours, lab six hours. Prerequisite: 111.
251-1 to 12 (1 to 3, 2 to 9) Photo Lab Management. Students will study the personnel and financial aspects of operating a commercial photo lab. Field trips will be taken to industrial, commercial, and general photo agencies to obtain first-hand knowledge of operations. An industrial planning package is required by each student. **(a)** Lecture one to three hours, **(b)** lab four to eighteen hours. Prerequisite: program adviser's committee consent.

Physical Education (Department, Major, Courses)

The Department of Physical Education offers programs which qualify graduates for positions as teachers in elementary and secondary schools or for alternative careers in private, industrial, and public settings. Whatever the student's career aims may be, the programs provide a full range of intriguing and challenging professional opportunities in diversified curricula. The student can choose a discipline best suited to individual interests, talents, temperament,and future plans. While studying new concepts, the student will observe the work of outstanding teachers, athletic coaches, and clinicians. Whichever direction is selected, the student will study and practice in modern facilities, with the latest equipment and will learn the most recent techniques.

Teacher Education Specialization. The teacher education specialization consists of courses which are designed to meet the requirements of the Illinois State Department of Education and are, in most cases, transferable to meet requirements of other states. The laboratory and classroom experiences consist of basic and applied sciences, methods of teaching, and acquisition of physical skills which include a variety of team and individual sports, exercise, and dance.

Athletic Training Specialization. The athletic training specialization is designed to train students to provide exemplary first-aid care for student-athletes, and ad-

minister rehabilitation, therapeutic treatment, and preventive conditioning programs under the supervision of a physician. This program prepares graduates for careers as athletic trainers in public schools, colleges, and private and industrial settings.

Exercise Science and Physical Fitness. This program is designed for students who wish to direct physical fitness programs in private, industrial and public settings. Preparation in this program enables the graduate to assess components of adult fitness, design individual exercise programs for the development and maintenance of physical fitness, and manage a physical fitness program. Graduates will have the foundation for continued study at the graduate level.

Dance Pedagory Specialization and Dance Performance/Choreography Specialization. The dance specializations are designed to prepare the dancer in education and in the performing and choreographic arts. Students in dance can audition to become members of the Southern Illinois Reporatory Dance Company, the resident company serving both faculty and students.

Physical Education and Special Education Specialization. Many handicapped students exhibiting learning problems also exhibit motor development deficiencies. Teachers trained in special education are responsible for delivering motor skill instruction to their students, but often lack the theoretical knowledge necessary to educate handicapped children. The Department of Physical Education offers an interdisciplinary approach to training to address this pre-service deficiency by combining work in special education and physical education. Graduates of this program are certified to teach in both areas. This allows the student to seek employment as a special education classroom teacher, a regular physical education teacher, an adapted physical education teacher, or any combination.

Bachelor of Science Degree, College of Education

PHYSICAL EDUCATION MAJOR — TEACHER EDUCATION SPECIALIZATION

General Education Requirements 45
GE-B 202; GE-B history or government; GE-D 101; 117, 118, or 119; GE-D 153; GE-E 201 and two hours of one departmental physical education activity to substitute for GE-E

Requirements for Major in Physical Education ..... (2) + 58
Core Requirements 19
Physical Education 115a, c, 303, 320, 326; Physiology 300 and a physiology course approved by the department
Additional Physical Education Requirements ..... (2) + 39
Physical Education 100; 115b,d,e; 116a,d,e,f; 117a,c; 120a,c,e; 118; 210; 212, 214; one hour selected from 215b,c,d; one hour selected from 216a,c,d,e; one hour selected from 217a,c; one hour selected from 220a,b,c; 300; 301; 305; 370; 375

Professional Education Requirements 25
See Teacher Education Program, page 66.

Total 128

PHYSICAL EDUCATION MAJOR — ATHLETIC TRAINING SPECIALIZATION

Students majoring in physical education with a specialization in athletic training must maintain the following standards to remain in the program:

1. A minimum grade point average of 2.25 at Southern Illinois University at Carbondale;
2. A minimum grade point average of 2.5 for all required course work in the athletic training specialization;
3. Obtain a grade of *B* or better in Physical Education 225;
4. Obtain a grade of *C* or better in Physiology 301;
5. Complete 1200 hours of clinical experience;
6. Be proficient in basic skills according to class level.

General Education Requirements 45
GE-A 101, GE-B 202; GE-D 153; GE-E 201 and two hours of one departmental physical education activity to substitute for GE-E
Requirements for Major in Physical Education 75
Core Requirements ..... (2) + 14
Physical Education 115a, c, 303, 326, 320 and a physiology course approved by the department
Additional Physical Education Requirements 22
Physical Education 225, 226, 305, 381, 382, 325, 327, 328a,b, 355d, 370
Additional Requirements 39
Physical Therapist Assistant 203, 208, Allied Health Careers Specialties 105; Health Education 334, 407, 434; GE-A 118; Chemistry 115; Psychology 303, 323; Food and Nutrition 100; Physiology 301; psychobiology
Total 120

PHYSICAL EDUCATION MAJOR — EXERCISE SCIENCE AND PHYSICAL FITNESS SPECIALIZATION

General Education Requirements 45
GE-A 115; GE-B 202; GE-D 101, 107, 118; four hours selected from GE-E 101a, 102a, 104d, 104m or 104n
Requirements for Major in Physical Education 67
Core Requirements 16
Physical Education 115a, c, 303, 320, 326; Physiology 303
Additional Physical Education Requirements 12
Physical Education 380, 381, 382, 408, 420
Additional Requirements 39
Accounting 210; Administrative Sciences 170, 202, 301 or 304, 350 or 385; Biology 306 or 308 or 309; Chemistry 140a, b; Computer Science 202 or Electronic Data Processing 217; Food and Nutrition 100, 320; a physiology course approved by the department
Electives 8
Total 120

PHYSICAL EDUCATION MAJOR — DANCE PEDAGOGY SPECIALIZATION

General Education Requirements 45
Requirements for Major in Physical Education 71
Core Requirements 9
Physical Education 303, Physiology 300 and a physiology course approved by the department
Other Physical Education Requirements 55
Physical Education 140a,b; 150a,b; 240a,b; 250a,b; 273a,b; 309: 313a,b; 315, 340a,b; 350a,b; 355; 416; 312; 417; 495; additional hours of 340a,b, or 350a,b

Other Requirements . . . . . (3) + 7
Music 101, Theater 217; four hours of elective dance courses
Electives 4
Total 120

PHYSICAL EDUCATION MAJOR — DANCE PERFORMANCE/CHOREOGRAPHY SPECIALIZATION

General Education Requirements 45
Requirements for Major in Physical Education 71
Core Requirements 9
Physical Education 303, Physiology 300 and a physiology course approved by the department
Other Physical Education Requirements 49
Physical Education 140a,b; 240a,b; 340a,b; 150a,b; 250a,b; 313a,b; 350a,b; 273a,b; 312; 379a,b; 417, 495; additional hours of 340a,b, or 350a,b
Other Requirements . . . . . (3) + 13
Music 101, Theater 217, ten hours of elective dance courses
Electives 4
Total 120

PHYSICAL EDUCATION MAJOR — PHYSICAL EDUCATION AND SPECIAL EDUCATION SPECIALIZATION

General Education Requirements 45
GE-B 108 and 202 and 301; Music 101; one GE-C literature course; GE-D 101, 117 or 119, 152 or 153; Mathematics 114 or equivalent to substitute for GE-D 107, GE-E 201 and two hours of physical education activity
Requirements for Major in Physical Education 97-101
Core Requirements 19
Physical Education 115a,c; 303; 320; 326; Physiology 300 and a physiology course approved by the department
Additional Physical Education Requirements 16
Physical Education 115b,d, or e; 116a,d,e, or f, 210, 305, 324, 212, 214, 215, or 216
Professional Education Requirements 31
Education 201, 301, 302, 303, 304c, 312, 350, 400[1], 401[1]
Special Education Requirements 25-26
Special Education 400, 411, 423, 425 10
Certification Area 9-10
The certification area requirements must include the specific courses approved by the department.
Behavior Disorders: Special Education 401, 417, 430
Learning Disabilities: Special Education 404, 419, 430
Mentally Retarded:
Educable Mentally Retarded; Special Education 402, 406, 418, 430
Trainable-Severely/Profoundly Handicapped: Special Education 402, 406, 421, 431
Curriculum, Instruction and Media 312, 315 6

Electives	6-9
Minimum of 6 hours unless student is emphasizing Behavioral Disorders in which case 9 hours of electives is required	
Psychology 301, 305, 307, 431	
Education Psychology 412	
Physical Education 301, 370	
Sociology 473	
Rehabilitation 406	
Total	142-146

[1]Includes eight hours of student teaching for special education and eight hours of student teaching for physical education.

Students wishing to gain experience in physical education and areas related to physical education may pursue work in aquatics, coaching, athletic training, dance, and health.

Minor in Physical Education

A student with a minor in physical education in secondary education must complete the following courses:

Required Activity Courses		10
Physical Education 115a, 115b, 115c	6	
Two sports selected from Physical Education 116a, 116d, 116e, 116f	2	
Two sports selected from Physical Education 117 or 120	2	
Required Methods Courses		4
Physical Education 212	1	
Three hours selected from 215, 216, 217, 218, 220	3	
Required Theory Courses		26
Physical Education 210, 301, 303, 305, 320, 326, 370	20	
Physiology 300	3	
A physiology course approved by the department	3	
Total		40

Minor in Aquatics

A student must have advanced swimming skill, a current American Red Cross Advanced Lifesaving certificate, and a current Red Cross Water Safety Instructor certificate in order to enter the program. A student without those qualifications must complete GSE 101f and Physical Education 306 and 307 in addition to the requirements listed below.

Physical Education 208, 310, 311, 355a, 418	11
Eight hours selected from Physical Education 308a,b,c,d,e, or 330c	8
Total	19

Minor in Athletic Training

Students in physical education with a minor in athletic training must complete the following requirements for retention in the minor: (1) 2.5 grade point average; (2) *B* in Physiology 300; (3) *B* in Physical Education 225; and (4) complete 800 hours of clinical experience supervised by a certified trainer at Southern Illinois University at Carbondale.

Requirements for the minor are listed below.

General Education Requirements 8
GE-B 202, GE-D 153, and GE-E 201
Physical Education Requirements 22
Physical Education 225, 303, 305, 320, 325, 326, 327, 328a,b, 355d
Other Requirements 21
Psychology 303, Health Education 334 and 434, Food and Nutrition 100, Physical Therapist Assistant 208, Physiology 300 and a physiology course approved by the department
Total 51

Minor in Coaching

For a minor in coaching, a student must complete the physical education requirements and a coaching sequence described below.

Physical Education Requirements ..... (3) + 20
Physical Education 210, 303, 320, 326, 329, 345 17
Physiology 300 3
A physiology course approved by the department 3
Coaching Sequence Requirements 6-7.5
Select one course from each of the following categories consistent with the planned coaching sport.
A. Physical Education 115, 116, 117, 120, 135, 306 or proficiency in the specific sport or 170 (specific varsity sport) 1-2
B. Physical Education 215, 216, 217, 220 (210 is prerequisite) 1
C. Physical Education 330 2
D. Physical Education 355c 2
E. Physical Education 360 or current official's rating ..... (0)-.5
Total 29-30.5

Courses

100-1 Introduction to Physical Education. An orientation to the profession, including relationships of physical education to education, current trends and practices, and career opportunities.

115-2 (2 per part) Development of Skill and Identification of Teaching Techniques of Physical Activities. **(a)** Aquatics. Prerequisite: GE-E 101a or consent of instructor. **(b)** Rhythm and dance. **(c)** Exercise, conditioning, and weight training. Introduces the student to basic exercise and conditioning with a practical emphasis. When appropriate the methods of teaching as related to the content will be incorporated. **(d)** Track and field. **(e)** Tumbling and gymnastics.

116-(1 per part) Development of Skill and Identification of Teaching Techniques of Team Sports. **(a)** Basketball. **(d)** Soccer. **(e)** Softball. **(f)** Volleyball.

117-(1 per part) Development of Skill and Identification of Teaching Techniques of Racquet Sports. **(a)** Badminton. **(c)** Tennis.

118-2 Skill Development and Identification of Dance. Folk, social, and square. Development of skills and introduction to teaching techniques in folk, social, and square dancing. Prerequisite: 115b.

120-(1 per part) Development of Skill and Identification of Individual and Dual Activities. **(a)** Archery. **(c)** Bowling. Fee $15. **(d)** Fencing. **(e)** Golf.

135-(1 to 3 per part) Advanced Level Sport Skills. **(f)** Scuba. **(g)** Self defense. Prerequisite: consent of instructor.

140A-2 Beginning Modern Dance. Technique I (semester one). Emphasis placed on proper body alignment and mechanics of breathing and phrasing, vocabulary and terminology, improvisation, and creative movement. Offered fall semester.

140B-2 Beginning Modern Dance. Technique II (2nd semester). Offered spring semester. Prerequisite: 140A or GE-E 103D and consent of instructor.

150A-2 Beginning Classical Ballet. Technique (semester one). An introduction to the traditional techniques of the classical dance as an academic craft and style that serves as a basis for logical physical training of the dancer, choreographer, and the teacher. Terminology employed to represent definite positions, steps, and movements to permit transmission of ideas in dance terms to offer the beginner an initial chart for understanding of traditional steps and complete phrases in the classical ballet idiom.
150B-2 Beginning Classical Ballet. Ballet Technique (semester one). Continued study of the beginning syllabus with emphasis placed on center practice. Prerequisite: 150A and consent of instructor.
170-2-4 (2 per part) Varsity Sports. (a) Football. (b) Basketball. (c) Track. (d) Tennis. (e) Gymnastics. (f) Baseball. (g) Golf. (h) Swimming and diving. (i) Cross country. (j) Wrestling. (k) Field Hockey. (l) Softball. (m) Volleyball. Prerequisite: participation as member of a varsity team. Mandatory Pass/Fail.
200-2 Body Mechanics and Exploratory Movement in Physical Activities for Primary Children. Provides a comprehensive coverage of the educational elements in basic movement education, its interpretation, analysis, terminology, structure, methods of teaching, and evaluative techniques. Observatory experiences provided.
201-3 Fundamental Skills and Activities of Low Organization for Children. Presents the entire scope of the physical education program for children in the intermediate grades. Course objectives program planning, facilities, supplies and equipment, the basic activities representative of a comprehensive sports and games program, and the design of progress reports. Observatory experiences provided.
202-3 Physical Activities for Children and Youth. Developing activities for motor perceptual development and skill acquisition appropriate for different age levels of children and youth. Tennis shoes required. Dress must permit ease of movement. Prerequisite: at least sophomore standing.
205-1 Physical Problems of the School Age Student. Reviews the common physical disabilities which occur in children. Examines both acute and chronic injuries and diseases with reference to the type of physical activities best adopted by the physical problems. Prerequisite: Physiology 300.
208-3 Instructor of Swimming. Designed to prepare the student to teach beginning swimming through lifesaving to pre-school through adult groups.
210-3 Motor Learning. Presents the basic learning principles which underlie motor skill performances associated with physical activity and sports and examines the variables affecting skill learning. Prerequisite: at least sophomore standing.
212-1 Teaching Practicum. Laboratory experience with children in a school, or recreational setting or assisting in a GE-E course at the University. Laboratory experience may also be arranged with special populations of children. Prerequisite: 211. Mandatory Pass/Fail.
214-3 Methods of Teaching Elementary Physical Education. For supervisors and teachers of physical education. Curriculum planning based on grade characteristics and educational philosophy, presentation of skills including skill tests, lead-up games, stunts and tumbling, games of low organization, creative rhythms, singing games, and folk dance. Second level (advanced course 314). Tennis shoes and appropriate dress for activity required. Open only to physical education majors. Prerequisite: 210, and at least sophomore standing.
215-(1 per part) Methods of Teaching Physical Education Activities. (b) Swimming. (c) Track and field. (d) Tumbling and gymnastics. Prerequisite: 211, and the corresponding 115 course.
216-(1 per part) Methods of Teaching Team Sports. (a) Basketball. (c) Soccer. (d) Softball. (e) Volleyball. Prerequisite: 211, and corresponding 116 course.
217-(1 per part) Methods of Teaching Racquet Sports. (a) Badminton. (c) Tennis. Prerequisite: 211, and corresponding 117 course.
218-(1 per part) Methods of Teaching Dance. (a) Modern (b) Folk, square, social. Prerequisite: 211, and corresponding course.
220-(1 per part) Methods of Teaching Individual and Dual Activities. (a) Archery. (b) Bowling. Fee $15. (c) Golf.
225-2 Introduction to Athletic Training. Designed for the non-physical education major who desires to acquire the minimum essentials for athletic training. Principle of training and conditioning, the injury conditions in various body parts, and primary treatment procedures.
226-1 Taping Techniques. To familiarize the student with all aspects of taping including practice taping experience for athletic injuries.
240A-2 Intermediate Modern Dance. Technique I (semester one). Emphasis placed on movement which is problematic to the individual. Focus placed on technique, style, and creative movement. Offered fall semester. Prerequisite: 140B and consent of instructor.
240B-2 Intermediate Modern Dance. Technique II (2nd semester). Continuation of 240A. Offered spring semester. Prerequisite: 240A and consent of instructor.
250A-2 Intermediate Classical Ballet. Ballet Technique (semester one). Progressive training toward mastery of body mechanics of the classical ballet syllabus, a continuation of syllabus work and terminology with emphasis on center practice — adagio, allegro, and movements en l'air. Prerequisite: 150B and consent of instructor.

250B-2 Intermediate Classical Ballet. Ballet-Technique (2nd semester). Continued study of the intermediate syllabus. Prerequisite: 250A and consent of instructor.
255-4 (2, 2) Classic Ballet Techniques for Men. Emphasizes stretch and strengthening exercises, alignment, and stylistic awareness. Prerequisite: 150a, b or equivalent and consent of instructor.
257-1 to 5 Current Work Experience. The student receives credit for current work experiences. Credit is awarded for many practical experiences and must be related to physical education and in process. Prerequisite: at least *C* average in physical education after 12 hours. Mandatory Pass/Fail.
258-1 to 5 Work Experience. The student receives credit for past work experiences. Credit is awarded for many practical experiences and must be related to physical education and already completed. Prerequisite: at least *C* average in physical education courses after 12 hours.
273-6 (3, 3) Dance History. **(a)** Acquaints the student with the evolution of dance from its primitive beginnings into a theatrical art form, how each civilization contributed to its development, and how each society within a civilization affected its form. **(b)** Acquaints the student with the role dance has had and continues to serve in the 20th century including theatrical dance, educational, and therapeutic dance. Prerequisite: 273a recommended.
300-2 Principles of Physical Education. Designs a structure of knowledge which underlies the practice of physical education with particular reference to a philosophical framework which embraces the moral and ethical values related to the function of personnel in the environment of physical education and competitive sport.
301-2 Organization and Administration of Physical Education. Consideration of the special problems related to the organization and administration of the curriculum, facilities and equipment, personnel management, budget making, legal liability, and public relations.
302-2 Kinesiology of Normal and Pathological Conditions. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical activities. Prerequisite: Physiology 300.
303-3 Kinesiology. Force system, its relation to the mechanics of muscle action. Analysis of muscular-skeletal forces involved in physical education activities. Prerequisite: Physiology 300.
304-2 Mechanical Basis of Human Movement. Applies body mechanics with application of mechanical laws and principles to performance in physical activities.
305-3 Physical Education for Special Populations. An introductory course designed to provide the regular physical education teacher with the minimal competencies needed to teach the mildly handicapped student in the mainstreamed class. The course will also aid the special education classroom teacher in delivering physical education services. Prerequisite: at least junior standing.
306-1 Advanced Swimming, Skill and Analysis. Prerequisite: GE-E 101b or equivalent.
307-2 Water Safety Instructor. Methods of teaching swimming and lifesaving. American Red Cross Water Safety Instructor certificate may be earned. Bathing cap recommended. Pool suit supplied or one piece nylon tank suit required. Prerequisite: 306 and current Red Cross advanced lifesaving certification. Elective Pass/Fail.
308-2 to 10 (2, 2, 2, 2, 2) Instructor of Aquatics. **(a)** Handicapped. **(b)** Skin diving. **(c)** Scuba diving. **(d)** Canoeing. **(e)** Swimming. Prerequisite: consent of instructor.
309-3 Creative Movement for Children. Curriculum planning practicum experience in using movement as a means of self-expression for the child to enhance mental, emotional, and physical development. During the first eight weeks, students will study various aspects of dance as can be applied to creative movement for children; the second eight weeks, students will work directly with children on a weekly basis. Dance attire required. Prerequisite: two semesters of modern dance.
310-2 Aquatics Facilities Management. Learning experiences designed to aid in the development of aquatic specialists who can efficiently work toward satisfactory solutions to the problems inherent in functional design, operation, and maintenance of aquatic facilities that are associated with schools, municipalities, and other organizations.
311-2 Lifeguarding. The skills and techniques for preparing selected individuals related to the aquatic lifeguarding task and training in the specifics of being a part of the aquatic lifeguarding system. Prerequisite: pass swimming test.
312-3 Dance Philosophies. An extensive survey of past and present choreographers and dance specialists whose movement theories and philosophies have been most influential in the continuing creative growth of dance as an art form.
313-4 (2, 2) Dance Composition and Improvisation. **(a)** Introduction to choreography as an art form with special emphasis given to the concepts and usage of component parts of composition (space, time, and force) and improvisation as tools for choreographic studies. Prerequisite: four semesters of dance and consent of instructor. **(b)** Study and practice of choreographic methods of selected 20th century choreographers. Prerequisite: 313a and consent of instructor.
314-2 Advanced Methods of Teaching Elementary Schools (Physical Education). Prerequisite: 202 or 214.

315-2 Methods of Teaching Dance. Curriculum planning for the dance student, covering analysis of dance fundamentals, identifying dance terminology, movement phrasing, accompaniment for class, and lesson planning. Focus will be on the structuring of modern dance and ballet classes at the beginning level. Dance attire required. Prerequisite: two semesters of modern technique and two semesters of ballet, both above the general education level.

320-3 Physiological Basis of Human Movement. Immediate and long range effects of muscular activity on the systems. Integrative nature of body functions and environmental influences on human performance efficiency. Laboratory to be arranged. Prerequisite: GE-A 209 or equivalent.

324-2 Advanced Methods of Teaching Special Populations. Prerequisite: 305.

325-2 Training Room Techniques. Intended for the student who wishes to complete a specialty as athletic trainer. Provides knowledge concerning the organization and administration of a training room, the installation and use of its modalities, and general procedures on training room operational functions. Prerequisite: Physiology 300.

326-3 Emergency Care and Prevention of Athletic Injuries. The theoretical and practical methods of preventing and treating athletic injuries; techniques of taping and bandaging; emergency first aid; massage; use of physical therapy modalities. Lecture and laboratory sessions. Prerequisite: Physiology 300.

327-2 Medical Aspects of Athletic Injury. The student will acquire an advanced understanding of the proper prevention and rehabilitation of athletic injuries. The student will also understand medical and surgical procedures and their consequent factors to be considered in treatment programs. Prerequisite: 326.

328-2 (1, 1) Field Experience in Athletic Training. The student will be responsible for prevention of injuries, taping, rehabilitation, evaluation, and coverage of practices and games for an intercollegiate athletic sport. Prerequisite: 327 and permission by athletic training program coordinator. Elective Pass/Fail.

329-3 Principles and Procedures for the Conduct of Interscholastic Athletics. An examination of the history, values, and trends in extracurricular sports programs. A review of regulations and standards as determined by the governing bodies for men's and women's sports and an in-depth study of coaching and administrative procedures. Prerequisite: competitive experience recommended and consent of instructor.

330-2-26 (2 per part) Techniques and Theory of Coaching. **(a)** Basketball. **(b)** Football. **(c)** Swimming. **(d)** Baseball. **(e)** Track and field. **(f)** Wrestling. **(g)** Tennis. **(h)** Gymnastics. **(i)** Golf. **(j)** Badminton. **(k)** Field hockey. **(l)** Softball. **(m)** Volleyball. Prerequisite: consent of instructor.

340A-2 to 4 (2, 2) Advanced Modern Dance. Technique I, semester one. Emphasis on technical and style development. Students assigned work in creative movement and performance. Prerequisite: 240B and consent of instructor.

340B-2 to 4 (2, 2) Advanced Modern Dance. Technique II, 2nd semester. Offered Spring semester. Continuation of 340A. Prerequisite: 340A and consent of instructor.

345-2 Psycho-Socio Aspects of Physical Education. Provides an overview of the key sociological and psychological concepts that are applicable to athletics and to physical activity. This course is intended as an introduction to the disciplines of sociology of sport and sport psychology. Prerequisite: junior standing.

350A-2 to 4 (2, 2) Advanced Classical Ballet. Ballet technique, semester one. Study of the advanced classical ballet syllabus. Attention to the individual progress in center practice: adagio, allegro, steps en l'air, and enchainment. Applications of the classical technique as a means of expression as an art form. Prerequisite: 250B and consent of instructor.

350B-2 to 4 (2, 2) Advanced Classical Ballet. Ballet technique, 2nd semester. Continued study of the advanced syllabus. Introduction to variations sur la pointe (women) Pas de deux. Prerequisite: 350A and consent of instructor.

355-2 to 10 (2, 2, 2, 2, 2) Practicum. **(a)** Aquatics. **(b)** Special Populations. **(c)** Coaching. Mandatory Pass/Fail. **(d)** Athletic Training. **(e)** Dance.

360-.5 to 2 (.5 per part) Theory of Officiating. **(a)** Badminton. **(b)** Basketball. **(c)** Field hockey. **(d)** Football. **(e)** Gymnastics. **(f)** Softball. **(g)** Competitive swimming. **(h)** Synchronized swimming. **(i)** Track and field. **(j)** Volleyball. **(k)** Wrestling. Prerequisite: the corresponding activity course.

369-2 Improving Teaching Through Testing (Workshop). Teaching aids, diagnostic measures, practices, and standardized tests for a variety of physical skills. Principles of programmed learning applied to psychomotor tasks.

370-3 Measurement and Evaluation in Physical Education. The theory of measurement in physical education, the selection and administration of appropriate tests of motor skills and the interpretation of results. Projects required. Prerequisite: junior standing.

375-2 Introduction to Professional Literature in Physical Education. An introduction to the professional literature in physical education with emphasis on the reading of research-oriented journals. Prerequisite: senior standing.

379-4 (2, 2) Advanced Dance Composition. Designed for the exploration of the choreo-

graphic form as related to other art forms, in order to produce dances for production. Continued studies of established choreographers' works as resource information for compositional themes. Prerequisite: 240a, b, 250a, b, 273a, b, 313a, b.

380-2 Aerobics. A study of theoretical and practical framework within which the concepts of aerobic fitness exist. Both an evaluation and a hands-on experience with the direct and indirect procedures commonly used to determine oxygen uptake capacity and aerobic power. A thorough discussion of the meaning of aerobic fitness as it applies to general fitness of the adult and aging person. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

381-2 Exercise and Weight Control. A theory practicum course dealing with the interrelationships of exercise and diet as factors influencing weight control. Emphasis on the practical delivery of programs of weight control in the context of adult programs of physical fitness. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

382-3 Graded Cardiovascular Testing and Exercise Prescription. A study of the controlled use of exercise to evaluate the cardiovascular function of an adult population and in specific persons of middle and older aged groups. The scientific basis of recommending exercise programs as a preventive rather than a treatment of heart disease will be stressed. Prerequisite: 320, junior standing, and approval of the instructor in the semester prior to enrollment.

400-3 Evaluation in Physical Education. Historical background of measurement in physical education; selection and evaluation of contemporary testing devices (predominantly tests of motor skill); structure and use of tests; administering the testing program; and statistical manipulation and interpretation and application of results.

402-2 Organization and Administration of Intramural and Extramural Activities. Planning intramural programs of sports. Planning and coordinating extramural activities commonly associated with physical education.

403-3 Individualizing Physical Education Instruction for Students with Special Needs. Designed as an introductory survey of handicapping conditions found most often in the regular class setting with implications for physical education instruction. Emphasis is placed on a diagnostic-prescriptive teaching model. Students will learn to plan, implement, and evaluate quality physical education services to handicapped students. Prerequisite: graduate standing or consent of instructor.

407-2 Advanced Theory and Techniques in the Prevention and Rehabilitation of Athletic Injuries. The application of scientific principles to the theoretical and practical methods of preventing and treating athletic injuries.

408-2 Physical Fitness: Its Role and Application in Education. An analysis of physical fitness as it relates to the total well-being of people. Specific units on the fitness parameters, hypokinetic disease and physical inactivity, stress, current level of fitness, training programs, and the beneficial aspects of regular exercise. Major emphasis is placed upon incorporating current thinking on physical fitness into the development of teaching models.

409-3 Social Aspects of Sport and Physical Activity. This course presents an analysis of the social implications of sport on society and includes consideration of sports in relation to sexual identifications, women, minority groups, politics, political activism, social deviance, and other related areas.

410-3 Behavioral Analysis of Sport. Application of sport psychology principles and theories to athletic situations in order to better understand sport related behavior. Behavioral problems related to sport are discussed, with a goal of enhancing athletic performance through the creation of a positive sport environment.

415-1 to 6 (1 per topic) Workshop in Sports. A concentrated experience in the latest theories and techniques of selected sports activities. Emphasis is placed on individual and team drills, instructional materials and improved teaching methods. One semester hour for each workshop. A total of four hours only of such workshop experience may be credited toward the master's degree. Workshop titles are: **(a)** Baseball. **(b)** Basketball. **(c)** Field hockey. **(d)** Football. **(e)** Gymnastics. **(f)** Soccer. **(g)** Softball. **(h)** Swimming. **(i)** Track and field. **(j)** Volleyball. **(k)** Tennis **(l)** Athletic training.

416-3 Current Theories and Practices in the Teaching of Dance. Designed to aid a critical evaluation and analysis of dance as an educational tool, from creative dance for children through dance in the University curriculum. Specific techniques, creative ideas, class organization, and general evaluation will be included. Notebook required. Prerequisite: four semesters of dance technique.

417-2 to 16 (2 semester hours per part) Concert Production Ensemble. Practical experience in concert production. **(a)** Performance, **(b)** choreography, **(c)** concert publicity, **(d)** costume design and construction, **(e)** set design and construction, **(f)** lighting design and technical execution, **(g)** sound production, **(h)** stage management and assistant directorship. Not for graduate credit. Prerequisite: 340a, b, 350a, b; 313a, b or 379a, b; or equivalent and consent of instructor.

418-2 Administration of Aquatics. The study of comprehensive aquatic programs, their implementation and coordination.
420-3 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Requires purchase of laboratory manual. Prerequisite: GE-A 209 or equivalent.
444-2 to 6 Contemporary Dance Workshop. Dance technique and theory, composition, improvisation, and production. Advanced study of the problems of choreography and production in their presentation as theater. Public performance is required. Prerequisite: one year of technique and theory or equivalent.
450-1 to 4 (1, 1, 1, 1) Advanced Dance Technique — Classical Ballet. Continued study of advanced techniques in the classical ballet. Methodology, theory, and performance is stressed. Attendance at no more than two on-campus dance concerts per semester is required as made available. Not for graduate credit. Prerequisite: 350a, b or equivalent, senior standing, and consent of instructor.
493-2 to 4 Individual Research. The selection, investigation, and writing of a research topic under supervision of an instructor. **(a)** Dance. **(b)** Kinesiology. **(c)** Measurement. **(d)** Motor development. **(e)** Physiology of exercise. **(f)** History and philosophy. **(g)** Motor learning. **(h)** Psycho-social aspects. Written report required. Prerequisite: consent of adviser and department chairperson.
494-2 (1, 1) Practicum in Physical Education. Supervised practical experience at the appropriate level in selected physical education activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning physical education facilities. Prerequisite: consent of adviser.
495-4 Senior Project in Dance. Work can be taken in one of three areas: **(a)** pedagogy, **(b)** performance, **(c)** choreography. Not for graduate credit. Prerequisite: senior standing and consent of instructor.
500-3 Techniques of Research.
501-3 Curriculum in Physical Education.
503-2 Seminar in Physical Education.
505-2 to 6 (2 per topic) Topical Seminar in Physical Education.
508-2 Administration of Athletics.
509-3 Administrative Theory and Practice in Physical Education.
510-2 Motor Development.
511-3 Analysis of Human Physical Movement.
512-3 Biomechanics of Human Motion.
513-3 Perceptual Motor Learning of Physical Skills.
514-3 Seminar: Motor Skills Learning and Performance.
515-3 Body Composition and Human Physical Performance.
517-2 Athletic and Physical Education Facilities Design, Construction, and Maintenance.
519-3 Physical Education for the Educationally Handicapped Child.
520-3 Metabolic Analysis of Human Activity.
530-1 to 4 (1, 1, 1, 1) Seminar in Research in Human Performance.
590-1 to 4 Readings in Physical Education.
592-2 to 8 Research in Physical Education.
599-3 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Physical Therapist Assistant (Program, Major, Courses)

The physical therapist assistant program, which has been accredited by the American Physical Therapy Association, is designed to prepare the student to work under the direction of a licensed physical therapist to treat disabilities resulting from birth defects, disease, or injury. Following the prescriptions of a physician, the therapist helps the patient to develop strength, mobility, and coordination, and provides relief from pain.

Students will learn massage, exercise, ultra sound, hydrotherapy and other therapeutic techniques in actual practice in the University's Clinical Center. They will work with professional therapists in learning such complex procedures as administering manual muscle tests, electrical muscle and nerve tests, and other evaluative measures.

Before graduation the student will serve a twelve-week internship in two separate hospitals away from the university campus.

The program is served by an advisory committee which provides supportive expertise. Current members are: David Collins, chief physical therapist, St. Mary's Hospital, Decatur; Dr. Harold Kaplan, department of physiology, Southern Illinois University at Carbondale; Laird Wisely, director, physical medicine, Good Samaritan Hospital, Mt. Vernon, Illinois; Barbara Michelvick, physical therapist assistant, Springfield; and Paula Siegel, Carbondale.

The student should expect to spend approximately $100 for uniforms and insurance.

Increasing numbers of elderly and chronically ill persons and the rapid expansion of health care programs in both urban and rural areas have created an urgent demand for trained physical therapists. Employment opportunities are available in hospitals, rehabilitation centers, and extended care facilities.

Physical therapy provides a unique service and requires a close interpersonal relationship with the patient. The candidate must possess the following qualities to work with people. 1) good mental and physical health, 2) stamina, 3) good coordination and manual dexterity, and 4) spirit of cooperation.

The prospective student should plan to make early application for admission to this program because enrollment is limited by size of faculty and physical facilities.

This associate degree program can be completed in two academic years, plus one summer session, at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Physical Therapist Assistant

GE-A 101, 118 and a physiology course approved by the coordinator	11
GE-B 202	3
GE-D 101, 152	6
Allied Health Careers Specialties 105	2
Health Education 334	3
Physiology 300	3
Physical Education 302, 320, and 325 or 326	7-8
Psychology 301, or 303, or 304, or 305	3
Physical Therapist Assistant 100, 113, 202, 203, 204, 205, 207, 208, 209, 213, 214, 321, 322	35
Total	73-74

Courses

100-2 Physical Therapy Orientation. Students will be able to describe the historical background, professional ethics, and legal aspects of physical therapy practice. They will be able to understand and utilize specialized medical terminology. They will be able to prepare treatment areas and patients for treatment. They will be able to understand the relationship of physical therapy to total health care. Lecture one hour. Laboratory two hours. Mandatory Pass/Fail.

113-1.5 Therapeutic Modalities I. The student will be able to demonstrate procedures used in the safe application of local heat and cold such as hot and cold packs, infra-red, and paraffin bath, and will also be able to demonstrate safe hydrotherapy procedures such as whirlpool and contrast baths. Lecture one hour. Laboratory two hours. Eight weeks.

202-2 Physical Rehabilitative Techniques. The student will be able to demonstrate rehabilitative procedures such as bed positioning, range of motion exercises, transfer activities and gait training, and will understand the concepts of total rehabilitation. Lecture one hour. Laboratory two hours.

203-2 Pathology. The student will be able to understand the fundamental basis of disease. Emphasis will be placed on those conditions treated through physical therapy procedures. The student will be able to describe the process of inflammation and repair bone and soft tissue injuries. Lecture two hours. Prerequisite: GE-A 209.

204-2 Physical Therapist Assistant, Practicum I. Students will be able to carry out routine physical therapy assisting procedures with selected patients. They will be able to demonstrate previously learned skills in massage, hydrotherapy, range of motion exercises, activities of daily living, and the safe application of heat and cold. They will also be able to assist in maintaining records and equipment. Lecture one hour. Laboratory three hours. Prerequisite: 113, 202, 207.
205-2 Physical Therapy Science. The student will be able to describe selected medical and surgical conditions from the standpoint of etiology, clinical signs and symptoms, and physical therapy treatment. Lecture two hours. Prerequisite: 100, GE-A 209, Physiology 300.
207-1.5 Massage. The student will be able to demonstrate massage techniques for specific conditions through role playing and supervised application of massage to selected patients, and will understand the scientific principles of massage and be aware of indications and contraindications for massage. Lecture one hour. Laboratory three hours. Eight weeks. Prerequisite: concurrent enrollment in 100 and consent of instructor.
208-3 Therapeutic Exercise I. Design to teach basic exercises for individual muscles or muscles groups, including breathing and postural exercises. Successful students will learn to select exercises for specific results; i.e., increasing strength, coordination, endurance, and range of motion. They will also learn normal motor development reflexes. Lecture two hours. Laboratory three hours. Prerequisite: Physiology 300.
209-3 Therapeutic Exercise II. Successful students will be able to administer therapeutic exercise techniques for specific clinical conditions through demonstrations and supervised application of exercise for selected patients. They will understand the scientific principles of therapeutic exercise and acquire the skills to effectively and safely utilize exercise equipment. Lecture two hours. Laboratory two hours. Prerequisite: 208, Physiology 300.
213-3 Therapeutic Modalities II. The student will be able to demonstrate procedures used in the safe application of local heat and cold such as diathermy, ultra violet, and ice massage and understand their physiologic effects. The student will be able to describe the indication and contraindications for the use of heat and cold. Lecture two hours. Laboratory three hours. Prerequisite: GE-A 101.
214-3 Physical Therapist Assistant, Practicum II. Successful students will be able to carry out more complex physical therapy assisting procedures with selected patients. They will be able to demonstrate previously learned skills in therapeutic exercise, electrical muscle stimulation, and the safe application of such modalities as ultra sound, diathermy, and ultra violet. They will be able to assist in maintaining records and develop cooperative spirit with other members of the department. Lecture one hour. Laboratory five hours. Prerequisite: 204, 208, 213.
321-8 (4, 4) Clinical Internship. The successful student will be able to apply previously learned theories and techniques of patient care through closely supervised practicum experience in two separate physical therapy facilities. **(a)** First six week internship. **(b)** Second six week internship. Must be taken in a,b sequence. Prerequisite: completion of all other requirements with a minimum grade average of 2.0.
322-2 Clinical Seminar. Students will be able to discuss with the coordinator of the program patient care and problems encountered during internship. They will have the opportunity to evaluate their educational experience at Southern Illinois University at Carbondale and their clinical internship experience. Prerequisite: concurrent enrollment in 321. Mandatory Pass/Fail.

Physics and Astronomy (Department, Major [Physics], Courses)

The undergraduate major in physics leading to the Bachelor of Science degree provides for a mastery of basic principles and methods of classical and modern physics and for flexibility in application through a breadth of coverage. Students considering a major in physics are urged to consult with the undergraduate adviser of the physics department. An applied physics/experimental physics optional curriculum is provided by selecting from the courses marked with an asterisk in the list of courses required for a major in physics.

Bachelor of Science Degree, College of Science

General Education Requirements ..... 45[1]
Supplementary College of Science Requirements 11
Foreign Languages (French, German, or Russian recommended) ..... (4) + 4

Biological Science (Not General Education)	6[3]
Mathematics 111	(4) + 1
Requirements for Major in Physics	72-73
Chemistry 115[2] and 222a or 222a,b,	7-8
Mathematics 150, 250, 251, 305, and 306 or 406 or 407	17
Physics	48
Physics 205a, b, c and 255a, b, c	12
Physics 301, 310, 320, 345, 410, 420, 430	20
16 hours from 324*, 328*, 351*, 424*, 425, 428* 431, 432, 445, 450*, 460a*, 460b*, 470, 470* *Applied/experimental option, concentrating on laboratory courses	16
Total	128-129

[1]The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]For students who do not pass a proficiency examination in chemistry.
[3]If courses are selected which are approved General Education substitutes the hours earned will reduce the 45 hour requirement in General Education.

Bachelor of Science Degree, College of Education

General Education Requirements	46[1]
Must include GE-B 202 and 212 or 301; GE-D 101 and 117 or 119; Mathematics 111 as a substitute for GE-D 107	
Requirements for Major in Physics	58-59
Chemistry 115[2] and 222a or 222a,b	7-8
Mathematics 150; 250; 251; 305; and 306 or 406 or 407	17[3]
Physics 205a,b,c and 255a,b,c	12
22 hours of physics courses numbered 300 or above including 310, 320, 324, 430, and either 425 or 431 and any three of the following courses which include laboratory: 328, 345 and 351, 424, 432, 450, 460a, and 470	22
Professional Education Requirements	28
See Teacher Education Program, page 66. Curriculum, Instruction and Media 468 is required.	
Total	132-134

[1]The General Education requirement may be reduced by taking major requirements which are approved substitutes for General Education courses.
[2]For students who do not pass a proficience examination in chemistry.
[3]Students wishing to qualify to teach mathematics in the secondary schools should take, in addition, Mathematics 311 or 319 and 319e or 352 and 352e.

Audio Marketing

Students interested in preparing themselves for positions related to audio-marketing within the high-fidelity industry are encouraged to take the following courses, which will provide skills needed for a career in high-fidelity sales:
Science Courses: GE-A 101, Physics 325, 355
Music Courses: GE-C 100
Business Courses: Accounting 210 or 220; GE-B 211 or Economics 214 or 215; Marketing 304, 401

Minor

A minor in physics requires 17 hours and must include Physics 203a, b and 253 a, b, or 205a, b and 255a, b and either 205c and 255c or 302 and 255c; 324 or 328 and 351 (no calculus prerequisite). Students having completed calculus (through

Mathematics 251) may select 345 and those taking differential equations may select from 310, 410, and 320, 420, to meet requirements.

Recommended electives:

Chemistry: 226, 340, and 460 or 462
Engineering: 222, 313, 361
Electrical Engineering: 421, 426
GE-B: 211
Geology: 416, 435, 436
Mathematics: 221, 306, 406, 407, 421, 452, 455, 475, 480, 481, 483

Courses

102-1 Everybody's Einstein. A non-mathematical presentation of Einstein's relativity theories on a popular level.

203-6 (3, 3) College Physics. Designed to meet preprofessional requirements and the needs of all students in the sciences, except physics and engineering. **(a)** Mechanics, heat, and sound. Prerequisite: Mathematics 110b or 111. Elective Pass/Fail. **(b)** Electricity, magnetism, light, and quantum physics. Three lectures, one quiz session. Prerequisite: 203a. Elective Pass/Fail.

205-9 (3, 3, 3) University Physics. **(a)** Introduction to mechanics of rigid bodies and fluids; wave motion; heat, kinetic theory, and thermodynamics. Prerequisite: Mathematics 150 or concurrent enrollment. **(b)** Continuation of 205a. Electricity and magnetism, geometrical optics, diffraction, interference, quantum physics. Three lectures per week. Prerequisite: 205a. **(c)** Introduction to concepts in modern atomic, molecular, and nuclear physics, particles and waves, solid state, relativity, and quanta. Three lectures per week. Prerequisite: 205 a,b or consent of instructor. Elective Pass/Fail.

253-2 (1, 1) College Physics Laboratory. One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 203a, b respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped. Elective Pass/Fail.

255-3 (1, 1, 1) University Physics Laboratory. One two-hour laboratory per week. Prerequisite: completion of or concurrent enrollment in 205a, b, c respectively; if the corresponding lecture course is dropped, the laboratory course must also be dropped. Elective Pass/Fail.

301-2 Theoretical Methods in Physics. Introduction to theoretical methods of general usefulness in intermediate and advanced undergraduate physics, with particular emphasis on applications of these methods to selected topics. Required of all physics majors prior to taking 310 or 320. Prerequisite: 203a or 204a or 205a, Mathematics 250 or consent of instructor. Elective Pass/Fail.

302-3 Astronomy — Honors. Current knowledge of the universe and the gathering of that knowledge. Includes properties of the solar system and theories of its origin, the structure and evolution of stars. Supplemented by occasional hours of evening observation. Prerequisite: one of 203a, 204a, 205a, plus Mathematics 111, or consent of instructor. Elective Pass/Fail.

310-3 Mechanics I. Motions of systems of particles and rigid bodies: gravitation, moving coordinate systems. Prerequisite: 301 or Mathematics 305 or concurrent enrollment. Elective Pass/Fail.

320-3 Electricity and Magnetism I. The theory of electric and magnetic fields; electrostatic fields in vacuum and in material media, special methods for the solution of electrostatics problems, energy, and force relations in electrostatic fields; stationary electric fields in conducting media, electric currents, magnetic fields, magnetic properties of matter. Prerequisite: 301 or Mathematics 305 or concurrent enrollment. Elective Pass/Fail.

324-3 Analog Electronics for the Scientist. Coordinated two-hour lecture and two-hour laboratory study in analog electronics. Emphasis is on overall modern electronics and its applications in the experimental research laboratory setting. Topics include DC and AC circuit theory, transducers and measurement techniques, semiconductor active devices, operational amplifiers and feedback, signal recovery and processing techniques, and noise reduction. Prerequisite: 203b or 205b and Mathematics 111. Elective Pass/Fail.

325-3 Advanced High-Fidelity. A study of the more advanced scientific concepts in high fidelity including Quadraphonic sound, FM and AM modulation, Noise Reduction Systems, Equalizers, as well as discussions on the important technical parameters of tuner, tape decks, speakers, microphones, amplifiers, cartridges, turntables, and headphones. Prerequisite: GE-A 101.

328-2 Light. Light propagation, reflection, refraction, interference, diffraction, polarization, and optical instruments. Prerequisite: 203 or 204 or 205. Elective Pass/Fail.

345-3 Thermodynamics and Statistical Physics. Thermal behavior of macroscopic matter, the laws of thermodynamics; basis for thermodynamics in statistical mechanics; basic

methods and applications of classical and quantum statistical mechanics. Elementary kinetic theory of matter. Prerequisite: 301, Mathematics 251. Elective Pass/Fail.

351-1 Optics Laboratory. Advanced experiments in geometrical and physical optics. One three-hour laboratory per week. Prerequisite: 328 or concurrent enrollment. Elective Pass/Fail.

355-1 Advanced High-Fidelity Laboratory. The lab accompanies Physics 325 and allows students to perform all of the electronic measurements necessary to characterize high fidelity components. Measurements will include such specifications as distortion, frequency response, stereo separation, power levels, FM sensitivity, selectivity, etc. Prerequisite: concurrent or previous enrollment in 325.

410-3 Mechanics II. Lagrange's equations, mechanics of continuous media, inertia and stress tensors, rotation of rigid bodies, small vibrations, and advanced principles. Prerequisite: 310 or consent of instructor. Elective Pass/Fail.

420-3 Electricity and Magnetism II. Induced electromotive force, quasisteady currents and fields, Maxwell's equations, electromagnetic waves and radiation, with applications. Prerequisite: 320 or consent of instructor. Elective Pass/Fail.

424-3 Digital Electronics for the Scientist. Coordinated two-hour lecture and two-hour laboratory study of digital electronics, microprocessors and minicomputers with emphasis on their application to the experimental research laboratory setting. Topics include Boolean algebra, basic digital techniques, large scale integration devices, analog to/from digital conversion, microprocessors and minicomputers, and data acquisition. Prerequisite: 324 or consent of instructor. Elective Pass/Fail.

425-3 Solid State Physics I. Structure of a crystalline solid; lattice vibrations and thermal properties; electrons in metals; band theory; electrons and holes in semiconductors; optoelectronic phenomena in solids; dielectric and magnetic properties; superconductivity. Prerequisite: 310, 320, 345, and 430 or consent of instructor. Elective Pass/Fail.

428-3 Modern Optics. Advanced course in modern optics covering such topics as interference and interferometers, diffraction, coherence, holography, optics of solids, laser and non-linear optics; recent developments in optical instrumentation for research. Prerequisite: 328 and 420. Elective Pass/Fail.

430-3 Quantum Mechanics I. An introduction to quantum mechanics including its experimental basis and application in atomic physics. Prerequisite: 310 and 320. Elective Pass/Fail.

431-3 Atomic and Molecular Physics I. Atomic spectra and structure; molecular spectra and structure; application to lasers. Prerequisite: 205c and 430. Elective Pass/Fail.

432-3 Nuclear Physics I. Basic nuclear properties and structure; radioactivity, nuclear excitation, reactions, nuclear forces; fission and nuclear reactors; controlled nuclear fusion. Prerequisite: 430. Elective Pass/Fail.

445-3 Statistical Mechanics I. An introductory course in the principles and applications of classical and quantum statistical mechanics. Elementary kinetic theory of matter. Prerequisite: 340 and 430 or concurrent enrollment. Elective Pass/Fail.

450-1 Modern Physics Laboratory. Introduces students to experimental research and encourages them to develop and carry out experiments. Prerequisite: 205c, either of 350 or 351, or consent of instructor. Elective Pass/Fail.

460-8 (4, 4) Physical and Applied Acoustics. Coordinated lecture and laboratory study in acoustical phenomena. Topics include vibration analysis, wave mechanics, two and three dimensional propagation and applications in physics, materials science, engineering, architecture, music, and environmental science. Emphasis on laboratory and field techniques with modern computer analysis. Prerequisite: 301 or Mathematics 305 or concurrent enrollment. Elective Pass/Fail.

470-1 to 3 Special Projects. Each student chooses or is assigned a definite investigative project or topic. Prerequisite: 310, 320. Elective Pass/Fail.

500-6 (3, 3) Mathematical Methods in Physics.

510-4 Classical Mechanics.

511-3 Mechanics of Deformable Bodies and Fluids.

520-6 (3, 3) Electromagnetic Theory.

530-6 (3, 3) Quantum Mechanics II.

531-6 (3, 3) Advanced Quantum Mechanics.

535-6 (3, 3) Atomic and Molecular Physics II.

545-6 (3, 3) Statistical Mechanics II.

560-6 (3, 3) Nuclear Physics II.

565-6 (3, 3) Solid State Physics II.

570-1 to 4 Special Projects in Physics.

571-6 (3, 3) X-Ray Diffraction and the Solid State.

575-2 to 4 Selected Topics in Physics.

581-1 to 3 (1, 1, 1) Graduate Seminar.

599-1 to 6 Thesis.

601-1 to 12 per semester Continuing Research.

Physiology (Department, Major, Courses)

The Department of Physiology offers training in mammalian physiology, cellular and comparative physiology, pharmacology, biophysics, and human anatomy. The undergraduate major in physiology provides general rather than specialized training in physiology. To become a professional physiologist usually requires the completion of an advanced degree in the field. An undergraduate major in physiology would provide an excellent foundation for those planning a career in teaching or research as well as for those planning a career in a medical field such as medicine, dentistry, veterinary science, nursing, or medical technology. Students considering a major in physiology are urged to consult with the undergraduate adviser of the Department of Physiology.

Bachelor of Arts Degree, College of Science

General Education Requirements	45
College of Science Requirements	5-7
Foreign Languages	(4) + 4
Mathematics 108 and 109 or 111 (or equivalent), or 140	(3) + 1-3
Requirements for Major in Physiology	57
Physiology Courses	24
Physiology 410a,b	10
Physiology electives	14
To be chosen from courses offered in the Department of Physiology, except 258 and 259.	
Physical Sciences	27
Chemistry 222a,b 344, 345, 346, 347	19
Physics 203a,b and 253a,b	8
Biological Sciences	6
Two from Biology 305, 307, 308, and 309	
Electives	11-13
Total	120

Minor

A minor in physiology requires a minimum of 16 hours of course work, 10 hours of which must be selected from the courses offered in the Department of Physiology, except 258 and 259. The remaining course work may be derived from closely related areas with prior approval of the department.

Junior-Senior Honors Program

Juniors who have shown outstanding ability in biology courses and related subjects in their freshman and sophomore years may apply for acceptance into the honors program. Honors students do independent study in the physiological sciences (Physiology 491) during their junior and senior years.

Courses

208-1 Laboratory Experiences in Physiology. Laboratory course to be taken concurrently with 209. Provides experiences with small animal experimentation and measurements made on the human subject. One two-hour laboratory per week. Prerequisite: concurrent enrollment in 209.

209-3 Principles of Physiology. A comprehensive introductory analysis of the functional machinery of the living body, with emphasis on human physiology. Three lecture hours per week. Not open to students who have taken 210. Prerequisite: a background in biological science recommended. Elective Pass/Fail.

210-5 Introductory Human Physiology. Beginning course in human physiology designed for majors in physiology and other biological sciences, and recommended to premedical and other students considering biological sciences and health professions. Three lectures per week, one hour discussion and one two-hour laboratory. Prerequisite: one year of biological science and a reasonable knowledge of chemistry.

211-3 Principles of Laboratory Animal Use in Teaching and Research. A basic to intermediate course for physiology and other life science majors and students in related fields. Principles and practices of laboratory animal medicine applicable to the research investigator are covered, including: legal requirements; procurement methods; detailed discussion of over 12 common research animals; breeding techniques; surgical instruments, suture patterns and surgical knots, suture materials, anesthetics, basic surgical techniques, suture patterns and gnotobiology, and zoonosis. Two one-hour lectures and one two-hour laboratory per week.

258-2 to 8 Work Experience Credit. Under special circumstances, practical experience in laboratories or other work directly related to physiology can be used as a basis for granting credit in physiology. Credit for past work experience is sought by petition to the chairperson of the department and requires approval of the dean of the College of Science. Credit for on-going work experiences requires approval by the chairperson of the department prior to enrollment.

259-2 to 8 Occupational Education Credit. Under special circumstances, advanced training in a paramedical or other field directly related to physiology can be used as a basis for granting credit in physiology. Such credit is sought by petition to the chairperson of the department and requires approval of the dean of the College of Science.

300-3 Human Anatomy. Lectures, demonstrations, and observations of the prosected body. Course primarily for students of physical education, with emphasis on musculoskeletal and nervous systems. Three lecture hours per week. Not open to students who have taken 301.

301-4 Survey of Human Anatomy. Lectures, demonstrations, and observations of the prosected body, plus experiences in the anatomy laboratory. Course is designed for students in nursing; mortuary science, biological science, and related disciplines. Three lectures hours and one two-hour laboratory per week. Not open to students who have taken 300.

401-10 (5, 5) Advanced Human Anatomy. Dissection of the human body. Primarily for students with a major in physiology or other biological sciences. Two hours lecture, six hours laboratory per week. Prerequisite: due to limited facilities, permission of the instructor is required.

402-5 (3, 2) Concepts of Anatomy. A detailed survey of human anatomy for preprofessional students with an interest in the biomedical disciplines, including radiographic, cross-sectional, and histological correlates. Three lectures per week fall semester, two lectures per week spring semester. Should be taken in a,b sequence. Not open to students who have had 401. Prerequisite: senior standing or consent of instructor.

410-10 (5, 5) Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous system, muscle. Primary course for all students majoring in physiology or related sciences. Three lectures and two two-hour laboratory sessions per week. May be taken in any sequence. Prerequisite: college level chemistry and physics and at least junior standing.

411-4 (2, 2) Experimental Animal Surgery. **(a)** Covers animal care and preparation, anesthesia, etc.; one lecture and one two-hour laboratory per week. **(b)** Provides training and practice in surgical procedures. Two two-hour laboratories per week. Must be taken in a,b sequence.

420-6 (3, 3) Principles of Pharmacology. Action of drugs and other chemical substances on the living organism; pharmacodynamics, chemotherapy, toxicology, and therapeutics. Pharmacologic action of analgesics, emetics and antimetics; pharmacology of the nervous system; pharmacology of the muscles; antihistaminics; drugs that affect the eye; drugs that combat infectious diseases. Two lectures and one two-hour laboratory per week. May be taken in any sequence. Prerequisite: organic chemistry and basic courses in biology, or consent of instructor.

430-4 (2, 2) Cellular Physiology. The nature and mechanisms of function of the living cell. Chemical and physical analysis of function at the cellular level. Two lectures per week. Prerequisite: organic chemistry.

433-6 (3, 3) Comparative Physiology. Variations of physiological processes in animal phyla, and comparison of these with human physiology. **(a)** Osmotic and ionic regulation; digestion, nutrition, and metabolism; excretion; respiration; defense and resistance. **(b)** Muscles and movement; circulation; nervous systems and sensory information; coverings and support; endocrine regulation; reproduction. Three lectures per week. Prerequisite: one year of biological science.

440-6 (3, 3) Biophysics. **(a)** Biomathematics, biomechanics and biotransport. **(b)** Bioelectrics and bio-optics applied to physiological problems. Three lectures per week. Prerequi-

site: Mathematics 141 or equivalent; one year of college biological science including Physiology 210 or its equivalent; one year of college physics. May be taken in b,a sequence with consent of instructor.

460-2 Electron Microscopy. Lecture course designed to introduce the student to the theory and principles of electron microscopy. Two lecture hours per week. Prerequisite: senior standing or permission of instructor.

461-3 Biomedical Electronics. Practical experience with modern electronic circuits and devices used for biomedical purposes, with circuit construction and troubleshooting practice. Two lectures and one two-hour laboratory per week. Prerequisite: consent of instructor.

491-3 to 8 Independent Research for Honors. Supervised readings and laboratory research in physiology directed by a member of the physiology faculty. Undergraduate honors students only. By special arrangement with the instructor in the physiology department with whom the student wishes to work.

492-1 to 3 Special Problems in Physiology. Supervised readings and laboratory research in physiology directed by a member of the physiology faculty. Open to undergraduate students only. By special arrangement with the instructor in the physiology department with whom the student wishes to work.

500-1 to 6 (1 per semester) Advanced Seminar in Physiology.
520-3 Advanced Endrocrinology.
530-3 Advanced Cellular Physiology.
531-2 Advanced Cellular Physiology Laboratory.
533-4 Advanced Comparative Physiology.
540-3 Advanced Biophysics.
555-3 Cardiovascular Pharmacology.
560-4 (2, 2) Physiological Techniques.
570-3 to 48 Advanced Physiological Topics.
571-3 Research and/or Problems in Biological Transmission Electron Microscopy.
572-2 Physiology of Fertilization.
574-3 Neuropharmacology.
575-3 Neuroendocrinology.
590-1 to 4 Readings or Research in Current Physiological Topics.
599-1 to 6 Thesis Research.
600-1 to 32 Dissertation Research.
601-1 to 12 per semester Continuing Research.

Plant and Soil Science (Department, Major, Courses)

The Department of Plant and Soil Science includes crop production, horticulture, and soils. There are many widely varied opportunities for students with an interest in plants or soils. Students may choose a general option within the department and select most of their upper division credits from a wide choice of electives throughout the School of Agriculture and the University. If interests are more specialized, students may elect the science option and specialize in one particular area, or may elect a specialization which will combine a broad background in plants and soils with selected business courses and business related electives. A specialization in environmental studies would familiarize the student with environmental problems relating to plants and soils.

Students selecting the landscape horticulture specialization can prepare for interesting careers in landscaping or gardening in parks, playgrounds, residential or industrial areas, road and street parkway improvement and maintenance, and in other public and private work to make the environment more pleasing and useful.

Opportunities for individual program development within the various options may be realized through work experience, internships, special studies, and seminars; however, no more than 30 hours of such unstructured coursework may be counted toward the degree. Students in all specializations are urged to make use of them to meet the goals and needs of their respective programs.

Students in all specializations must complete the plant and soil science core courses. These courses are 200, 220, 240, and one hour of 381.

There may be extra expenses for field trips, manuals, or supplies in some courses.

Bachelor of Science Degree, School of Agriculture

	SPECIALIZATIONS		
	General	Science	Business
General Education Requirements	47	47	47
Physics 203a or physics substitute[1]	—	3	—
Chemistry 140a substituted for GE-A 106-3	4	—	4
Chemistry 222a	—	4	—
Botany 200 substituted for GE-A 115-3	4	4	4
Agribusiness Economics 204 substituted for GE-B 211	3	3	3
GE-B 202	—	—	3
GE-D 101	3	3	3
GE-D 107	3	—	3
GE-D 117 or 118[2]	2	2	2
GE-D 153	3	3	3
Mathematics 108[4]	—	3	—
Requirements for Major in Plant and Soil Science	53	64	64
Courses in two other departments in agriculture	6	6	6
Botany 320	4	4	4
Chemistry 140b	4	—	4
Chemistry 222b, 340, and 341	—	10	—
Mathematics 109	—	3	—
Physics 203b	—	3	—
Plant and Soil Science 200, 220, 240, 381-1	11	11	11
Other Plant and Soil Science courses[3]	17	17	17
Other Agriculture electives	11	6	6
Mathematics, physical sciences, or biological sciences	—	4	—
Accounting 210, Administrative Sciences 301 or 304, Marketing 304, or Agribusiness Economics 360	—	—	9
Business electives and supporting courses	—	—	7
Electives	20	9	9
Total	120	120	120

[1]Physics 205a may be substituted.
[2]GE-D 118 is highly preferred.
[3]Plant and soil science electives must include 15 hours of structured coursework at the 300 or 400-level, with no less than 9 hours at the 400-level.
[4]Mathematics 111 may be substituted.

PLANT AND SOIL SCIENCE MAJOR — LANDSCAPE HORTICULTURE SPECIALIZATION

General Education Requirements	47
Chemistry 140a substituted for GE-A 106-3	4
Botany 200 and 201 substituted for GE-A 115-3	4
Agribusiness Economics 204 substituted for GE-B 211	3
GE-D 101	3
GE-D 107	3

GE-D 117 or 118[1]	2
GE-D 153	3
Requirements for Major in Plant and Soil Science with a Specialization in Landscape Horticulture	63-65
Agricultural Education and Mechanization 371, 374	4
Biology 307	3
Botany 320 and 356 or 357	7-8
Chemistry 140b	4
Plant and Soil Science 200, 220, 240, 322, 327, 328a,b, 381-1, 428a,b, 432 or 434	30-31
Agriculture electives	12
Zoology 316	3
Electives	8-10
Design 332 and 432 are highly recommended.	
Total	120

[1]GE-D 118 highly preferred.

PLANT AND SOIL SCIENCE MAJOR — ENVIRONMENTAL STUDIES SPECIALIZATION

General Education Requirement	47
Chemistry 222a or chemistry substitute	4
Botany 200 substituted for GE-A 115-3	4
GE-A 330	3
Agribusiness Economics 204 substituted for GE-B 211	3
GE-B 212	3
GE-C 221	3
GE-D 101	3
GE-D 118	2
GE-D 153	3
Mathematics 108 substituted for GE-D 107	3
Requirements for Major in Plant and Soil Science with a Specialization in Environmental Studies	65
Agriculture 333	2
Animal Industries 455	2
Agribusiness Economics 401	3
Plant and Soil Science 200, 220, 240, 381-1, 419, 420, 441, 447, 468	27
Agriculture electives, Plant and Soil Science 328a and 346 highly recommended	9
Thermal and Environmental Engineering 314	4
Political Science 325	3
Mathematics 109[1] and 141	7
Chemistry 222b	4
Botany 320	4
Electives	8
Total	120

[1]Mathematics 111 may be substituted.

Minor

A minor in plant and soil science is also available to those interested in field crop production, horticulture, or soils. A total of 16 hours of credit is required with at least 12 hours taken at Southern Illinois University at Carbondale. One course

may be selected from 200, 220, or 240; and at least eight hours from 300 or 400 level structured courses. These courses may not be taken on an elective Pass/Fail basis. The chairperson should be consulted for assistance in selecting this field as a minor.

Courses

100-2 Plants for Society. How plants have affected the development and culture of society. Interrelationship between plants and people. Importance of plants for beauty, food, fiber, medicine, and drugs. Not applicable to a major or minor in plant and soil science, but may be used as agriculture elective. Elective Pass/Fail.

140-2 Soils for Society. The importance of soil in everyday life. Soil as a medium for plants grown for food, fiber and leisure. The importance of soil in reducing harmful chemicals and wastes and improving our environment. Not applicable to a major or minor in plant and soil science, but may be used as agriculture elective. Elective Pass/Fail.

200-3 Principles of Field Crop Production. Production of important field crops of the world with greatest emphasis on U.S. and midwestern field crops; crop production changes and adjustments, crop distribution over U.S., and crop groups and classifications, special agronomic problems, crop enemies, crop ecology, fertilizer and liming practices, tillage, crop improvement through breeding. Field trip (no cost).

220-3 General Horticulture. General principles of plant propagation, vegetable growing, fruit growing, landscape gardening, and floriculture. Seniors cannot enroll without consent of instructor. Prerequisite: Botany 200 or equivalent.

225-2 Genetics for the Amateur Gardener. An introduction to the essential principles of genetics and plant hybridization utilizing common garden and house plants.

228-2 Floral Arrangements. Theory and practice in the art of flower and plant arrangement for the home, show, and special occasions. History, elements, and principles of design and use of color.

238-2 Home Gardening. Vegetable gardening techniques for the home gardener. Both inorganic and organic methods are used together with the latest recommended varieties for the small garden.

240-4 Soil Science. Basic and applied chemical, physical, and biological concepts in soils. The origin, classification and distribution of soils and their relationship to humans and plant growth. Prerequisite: Chemistry 140b or equivalent; geology suggested.

257-1 to 10 Work Experience. Credit for on-campus work experience in the areas of plant and soil science, or credit through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Credit awarded based on 4 hours of work per week during the semester for each hour of credit. Prerequisite: consent of instructor. Mandatory Pass/Fail.

258-1 to 15 Prior Work Experience. Credit for work experience prior to University entrance in the areas of plant and soil science. Credit awarded based on 7.5 hours credit per year of career related full-time employment. Proportionately lesser amounts of credit authorized for shorter employment period. No grade for prior work experience. Prerequisite: consent of chairperson.

300-5 (2, 3) Field Crop Production. Principles of growth and production of field crops and their utilization. **(a)** Primarily corn and soybeans. **(b)** Small grains primarily wheat and grain sorghum with laboratory demonstrating principles discussed in both **a** and **b** including research projects, and grading and utilization of grain. Laboratory field trips, approximately $5. Prerequisite: an introductory crops course or consent of instructor. Elective Pass/Fail.

305-4 Plant Genetics. Principles of genetics and evolution of plants, elementary plant breeding, and the interaction between plant breeding and industry. Prerequisite: a course in biology or botany. Elective Pass/Fail.

310-3 Morphology of Crop Plants. Cellular structure, vegetative and reproductive development, and grass morphology of major crop plants. Utilization of crop plant parts. Prerequisite: one course in introductory biology or equivalent. Elective Pass/Fail.

322-3 Turfgrass Management. Principles and methods of establishing and maintaining turfgrass for lawns, recreational areas, and public grounds. Identification of basic plant and soil materials and management of turfgrasses in variable environments. Prerequisite: a biology course.

325-3 Garden Flowers. Culture, identification, and use of flowering bulbs, annuals, biennials, and perennials in the home flower garden. Prerequisite: an introductory course in biology or consent of instructor. Elective Pass/Fail.

327-3 Landscape Plant Materials. Identification, usage and adaptability to the landscape of woody (deciduous and evergreen) and ornamental shrubs, trees and vines. Use of plant keys. Prerequisite: an introductory botany course or consent of instructor.

328-4 (2, 2) Appreciation of Landscape Design. **(a)** Introduction to theory and principles of landscape design as applied to the modern home. Property selection and climate control. **(b)** Laboratory. Practical application in modern methods of property planning including

the individual components of the completed landscape plan and selection of plants. Prerequisite: 327 and Agriculture Education and Mechanization 371 and 374 or equivalent.
338-3 Flower Shop Management. Requirements for establishing and operating a retail flower shop. Business management, floral design, and marketing. Prerequisite: 228, a course in economics, or consent of instructor.
346-2 Soil and Water Conservation. How soil erosion occurs, evaluation of the various factors affecting it, its effects on humans, food production and pollution; and practical means of control. Prerequisite: a course in soils suggested.
347-1 Laboratory Practices in Soil and Water Conservation. Effects of soil properties and rainfall characteristics on erodibility of soils. Laboratory work in land surveying, relief mapping and a study of structures related to soil and water conservation.
359-1 to 6 Intern Program. Supervised work experience program in either an agricultural agency of the government or agri-business. Prerequisite: junior standing and approval of department. Mandatory Pass/Fail.
380-4 (2, 1, 1) Plant and Soil Evaluations. (a) Grain grading to include crop and weed identification and seed identification and analysis. (b) Comparative evaluation and judging of horticultural crops to include flowers, fruits, vegetables, woody ornamentals. Field trip costing approximately $25. (c) Soil evaluation to include identification of genetic horizons, their physical characteristics and classification. Field trips (no cost). These courses are not required for participation in SIU judging team activities. Elective Pass/Fail.
381-1 to 2 (1, 1) Plant and Soil Science Seminar. Discussion of special topics and/or problems in the various areas of plant and soil science. Prerequisite: GE-D 153 and junior standing.
390-1 to 4 Special Studies in Plant and Soil Science. Assignments involving research and individual problems. Prerequisite: consent of department chairperson.
391-1 to 4 Honors in Plant and Soil Science. Independent undergraduate research sufficiently important to three hours per week of productive effort for each credit hour. Prerequisite: junior standing, GPA of 3.0 with a 3.25 in the major, and consent of department chairperson.
400-2 Trends in Agronomy. A discussion session format will be employed as a means of acquainting students with recent literature and allowing them to remain current with latest developments in their area of specialty. Prerequisite: senior standing.
405-3 Plant Breeding. Principles of plant breeding emphasized together with their application to the practical breeding of agronomic, horticultural, and forest plants. Field trip costs approximately $10. Prerequisite: 305 or equivalent. Elective Pass/Fail.
408-3 World Crop Production Problems. Ecological and physiological factors influencing production in various areas of the world. Natural limitations on world crop production. Non-agricultural factors influence world crop output. Prerequisite: 200. Elective Pass/Fail.
409-3 Crop Physiology and Ecology. The effects and significance of physiological and ecological parameters on crop yields. Prerequisite: Botany 320 or consent of instructor.
419-3 Forage Crop Management. Forage crop production and utilization; forage crop characteristics, breeding, and ecology; grasslands as related to animal production, soil conservation, crop rotation, and land use. Field trip costs approximately $5.00. Prerequisite: Botany 200 or one course in biology or equivalent.
420-4 Crop Pest Control. Study of field pests of forest; orchard, field, and garden crops; pest control principles and methods; control strategy; and consequences of pest control operations. Prerequisite: introductory biology or crop science course and/or consent of department.
422-3 Turfgrass Science. Basic concepts of physiology, growth, and nutrition of turfgrasses and their culture. Application of turfgrass science to management of special turf areas such as golf courses, athletic fields, and sod farms; and to the turfgrass industry. Field trips cost approximately $15. Prerequisite: 240 and 322 or equivalent or consent of instructor.
423-3 Greenhouse Management. Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; and greenhouse heating and cooling systems. Field trips costing approximately $5. Prerequisite: 220 or consent of instructor.
424-4 Floriculture. Production, timing, and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Field trip costing approximately $25. Prerequisite: 423 or consent of instructor.
428-6 (3, 3) Advanced Landscape Design. Theory and principles of residential landscape design. Practice in drawing residential landscape plans. (a) Emphasis on arrangement of unit areas. (b) Emphasis on details of design and selection of plants. Prerequisite: 328-4 or consent of instructor.
430-4 Plant Propagation. Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts, and other methods of propagation. Field trip costing approximately $5. Prerequisite: 220.
432-4 Nursery Management. Principles and practices involved in the propagation, production, and marketing of ornamental landscape plant materials. Emphasis on plant production with field trips to various production areas costing approximately $40. Prerequisite: 220 and 327a, or consent of instructor.

434-3 Woody Plant Maintenance. Care and management of ornamental shrubs and trees commonly used in the landscape. Topics to include trimming, pruning, fertilization, transplanting, and diagnosis of woody plant problems. Prerequisite: 327 or Forestry 202 or consent of instructor.
436-4 Fruit Production. Deciduous tree and small fruit growing, physiology, management practices, marketing. Prerequisite: 220 or consent of instructor.
437-4 Vegetable Production. Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Field trip costing approximately $5. Prerequisite: 220 or consent of department.
441-3 Soil Morphology and Classification. Development, characteristics, and identification of soils; study of profiles; and interpretation and utilization of soil survey information in land use planning. Field trip costing approximately $5. Prerequisite: 240 or consent of instructor.
442-3 Soil Physics. A study of the physical properties of soils with special emphasis on soil and water relationships, soil productivity, and methods of physical analysis. Prerequisite: 240.
443-3 Soil Management. The soil as a substrate for plant growth. Properties of the soil important in supplying the necessary mineral nutrients, water and oxygen and for providing an environment conducive to plant root system elaboration. Soil management techniques that are important in optimizing plant growth. Prerequisite: 240. Elective Pass/Fail.
447-3 Fertilizers and Soil Fertility. Recent trends in fertilizer use and the implications of soil fertility build up to sufficiency and/or toxicity levels; the behavior of fertilizer material in soils and factors important in ultimate plant uptake of the nutrients; the plant-essential elements in soils and ways of assessing their needs and additions; tailoring fertilizer for different uses and management systems; implication of excessive fertilization in our environment. Prerequisite: 240; concurrent enrollment in 448 suggested. Elective Pass/Fail.
448-2 Soil Fertility Evaluation. A laboratory course designed to acquaint one with practical soil testing and plant analysis methods useful in evaluating soil fertility and plant needs. One hour lecture, two hours laboratory. Prerequisite: 240; 447 or concurrent enrollment; or consent of instructor.
454-4 Microbial Processes in Soils. A study of microbial numbers, characteristics and biochemical activities of soil microorganisms with emphasis on transformations of organic matter, minerals, and nitrogen in soil. Prerequisite: 240 or Microbiology 301. Elective Pass/Fail.
468-3 Weeds — Their Control. Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction, mechanical, biological, and chemical control of weeds. State and Federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field Trips costing approximately $5. Prerequisite: an introductory biology course. Elective Pass/Fail.
518-3 Principles of Herbicide Action.
520-3 Growth and Development of Plants.
524-2 Advanced Plant Genetics.
526-4 Cytogenetics.
547-2 Soil-Plant Nutrient Relationships.
560-5 (3, 2) Field Plot Technique.
581-1 to 4 (1, 1, 1, 1) Seminar.
582-6 (2, 2, 2) Colloquium in Plant and Soil Science.
588-1 to 8 International Graduate Studies.
590-1 to 4 Readings.
592-1 to 3 Special Problems.
593-1 to 4 Individual Research.
599-1 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Political Science (Department, Major, Courses)

The study of political science is concerned with predicting, explaining, and evaluating the political behavior, beliefs, laws, and organizational arrangements of people in a variety of settings. A major in political science provides rigorous social science training. A variety of courses afford a student an opportunity to study, in depth, individual and group behavior, political, administrative, and judicial processes, comparative national and subnational governmental systems, intergovernmental relations and conflict resolution, and normative and empirical political theory. The student who is interested in the public sector will find discussions of such topics as voting behavior, American foreign policy, and the

decisions and opinions of Supreme Court justices to be challenging experiences.

A major in political science provides excellent training for the public service, scientific polling and political analysis, management training programs, and teaching, particularly at the secondary level. A political science major also provides an excellent foundation for professional graduate training in law, journalism, public administration or public affairs, as well as for graduate work in political science which is essential for a career in higher education. For the non-vocationally oriented student, political science is an excellent major for anyone with a keen interest in politics and public affairs.

A student planning to major in political science should consult with the academic adviser of the department as early as possible in order to plan an orderly and coherent program. All members of the department are available for consultation on their academic specialties.

Students majoring in political science must take GE-B 212. Political Science 200, 213, 270, 378, and GE-B 250 are background courses for many advanced courses in the department. In fulfilling General Education requirements or in choosing electives, political science majors should select courses from economics, psychology, sociology, anthropology, geography, and history. Mathematical or statistical training is highly recommended because of the emphasis on empirical research and analysis in political science. Such training will also enhance vocational opportunities. Depending on special interest, a student should also consider courses in foreign languages or computer programming. Such courses are particularly important for the student who is planning to enter graduate school.

Qualified students are encouraged to inquire about individualized courses of study such as Political Science 390, 395, and 494. The interested student should contact the academic adviser of the department or a member of the faculty.

At least fifteen of the required thirty-three credit hours for political science must be earned at Southern Illinois University at Carbondale.

Courses taken as Pass/Fail will not be counted as fulfilling the requirements for a major in Political Science.

Bachelor of Arts, College of Liberal Arts

General Education Requirements 45
Supplementary College Requirements (See Page 75) ..... (4) + 8-14
Requirements for Major in Political Science 33
GE-B 212, or equivalent
Additionally, political science electives, including 200 and 300 GE-B courses offered by the department, to total 33 hours. Courses shall be distributed so that a minimum of one course is taken in 5 of the following 6 areas: scope, methods, and political theory; American politics; public law; public administration; comparative politics; and international relations. GE-B 212 does not satisfy an area requirement. A minimum of three of the electives must be taken at the 400 level.
Electives 28-34
Total 120

Bachelor of Science Degree, College of Education

A major in political science for education requires 33 credit hours of work in the department. This work must be distributed among the subfields of the discipline in the same manner as the 33-hour requirement described above for the Bachelor of Arts degree.

Every student enrolled in this program should seek regular advisement in the Department of Political Science to insure that department requirements will be fulfilled.

Students obtaining a Bachelor of Science degree in the College of Education must satisfy all requirements of that college. See Teacher Education Program, page 66. Professional education and other certification requirements may be found in the section of this catalog titled Curriculum, Instruction, and Media. All students enrolled in a teacher education program are required to take a special methods course. Since there is no methods course in political science, Curriculum, Instruction, and Media 469 is a required course for all students in this program. The course should be completed before student teaching. A student enrolled in the teacher education program is required to have a 2.50 grade point average in political science in order to be recommended for student teaching by the department.

Minor

A minor in political science consists of 15 hours to be approved by the department adviser.[1]

[1]Students completing a minor in political science for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

Courses

The numbers preceding the following course titles have been designed to group courses by subject matter as well as level. A summary explaining the numbering system follows:

COURSE	LAST TWO DIGITS OF COURSE NUMBER
Scope, Methods, and Political Theory	00-09
American Politics	10-29
Public Law	30-39
Public Administration	40-49
Comparative Politics	50-69
International Relations	70-89
Miscellaneous	90-99

Courses

200-3 Introduction to the Discipline of Political Science: Scope. Examination of the philosophy, methodology, theories, approaches and relevant generalizations of the study of politics and of the scope and subfields of political science. Not open to seniors without instructor's consent. Elective Pass/Fail.

207-3 Contemporary Political Ideologies. A survey of recent political ideologies: Nationalism, Socialism, Communism, Liberal Democracy, Conservatism, Christian Socialism, Fascism, Contemporary Liberation Movements. Elective Pass/Fail.

213-3 State and Local Government. Structure, functions, and decision-making processes of subnational governments in the United States. Prerequisite: GE-B 212. Elective Pass/Fail.

214-3 Illinois Government. The politics, structure, and function of state and local governments in Illinois with stress upon the historical development of the political culture, current issues and events in the light of the historical background, and the interrelationship of politics, structure, and policy. Prerequisite: 213 or sophomore standing. Elective Pass/Fail.

220-3 Problems in American Public Policy. Study and analysis of selected public policies and programs. Examination of major issues will have a problem orientation and their selection will vary. The following topics will usually be included: political economy, defense, welfare and health, urban affairs, and the relationship between the media, energy, education and politics. Prerequisite: GE-B 212 recommended.

270-3 Introduction to International Relations. A study of world politics. The cause of international conflict and conditions of peace. Elective Pass/Fail.

300-3 Introduction to the Discipline of Political Science: Methods. An examination of the research methods and data analysis techniques used by political scientists in their analysis of political questions and problems. Prerequisite: None, 200 recommended. Elective Pass/Fail.

303-3 Introduction to Political Theory. Normative and testable theories in political science are introduced and interrelated. Guidelines for applying those theories to empirical and ethical problems are discussed. Prerequisite: 200 recommended. Elective Pass/Fail.

316-3 Political Socialization. (Same as Sociology 316.) An inquiry into interdisciplinary empirical theory and research on political learning relevant to (1) who (2) learns what (3) from whom (4) under what circumstances (5) with what effects. Prerequisite: 200 or GE-B 212 or instructor's consent. Elective Pass/Fail.
317-3 Public Opinion and Electoral Behavior. The nature and function of public opinion as it is related to electoral behavior. Additional sociological and psychological bases of voting behavior will be studied. Prerequisite: None; 200 recommended. Elective Pass/Fail.
318-3 Political Campaigns and Elections. (Same as Speech Communication 358.) Analysis of modern political campaigns and the role they play in a democracy. Emphasis will be on recent developments in the planning and execution of campaigns by mass media and communication specialists and the role of the political parties and the public opinion polls in this process. Prerequisite: GE-B 212. Elective Pass/Fail.
319-3 Political Parties. Nature, structure, and functions of political parties, with particular attention to the roles and activities of political parties in the United States. Attention also given to voting behavior and elections. Prerequisite: GE-B 212. Elective Pass/Fail.
321-3 The Legislative Process. A comparative analysis of legislatures and legislative behavior. Emphasis is on the United States Congress. Prerequisite: GE-B 212. Elective Pass/Fail.
322-3 American Chief Executive. The origin and background of the presidency and the governorship, qualifications, nomination and election, succession and removal, the organization of the executive branch, and the powers and functions of the president and governor. Prerequisite: GE-B 212. Elective Pass/Fail.
324-3 Politics and Public Policy. The public policy-making process in the United States evaluated and a wide range of public policy programs analyzed. Prerequisite: GE-B 212. Elective Pass/Fail.
325-3 Politics and Environmental Policy. Prompted by the conservation lobbies, United States and state legislatures moved to preserve the biosphere and to create a healthier human environment. The course will cover the traditional common law remedies to protect the citizens and their property from the hazards of pollution and new broader constitutional and/or statutory right to a clean, healthy, and pleasant environment. Prerequisite: None; GE-A/GE-B/GE-C 221 or Political Science 340 recommended. Elective Pass/Fail.
326-3 Politics of Social Welfare. The Social Security Act and other legislation of major significance for the welfare and maintenance of the family, the handicapped, children, and other special groups. Their relationship to the legal structure of federal, state, county, township, and municipal welfare facilities, and institutions with indications of economic and social consequences. Elective Pass/Fail.
328-3 Field Research in Public Policy. Students study public policy of their choice, individually or in teams, using field research techniques such as interviewing, direct observation, and inspection of public records. The policy studied is then evaluated in light of student-developed concepts of the public interest. Prerequisite: GE-B 212. Elective Pass/Fail.
330-3 Introduction to the Legal Process. Designed to provide a basic background in the United States legal process for students who want only an overview of the process or who plan to take an extensive number of additional courses in the judicial area. The course will survey the history of common law, legal reasoning, basic terminology, conventional legal research, the legal profession, and provide an introduction to civil and criminal processes. Prerequisite: GE-B 212 recommended. Elective Pass/Fail.
332-3 Introduction to Civil Liberties and Civil Rights. Course focuses on civil rights (e.g. voting, housing, employment, education) in terms of congressional statutes, the judicial rulings which led up to them, the administrative development and judicial interpretation of the statutes. Prerequisite: GE-B 212 recommended. Elective Pass/Fail.
334-3 Criminal Justice in Society and Court Management. Designed to provide the student with an in-depth look at the organization and management of federal, state, and local criminal courts. Focuses on the criminal process and the rights of defendants as they are processed by the system. Prerequisite: GE-B 212 recommended. Elective Pass/Fail.
340-3 Introduction to Public Administration. An introduction to the study of public bureaucracy. Theoretical, political, and practical issues of organization, staffing, financing, and other matters are surveyed. United States administration and organizational behavior are stressed. Prerequisite: GE-B 212. Elective Pass/Fail.
353-3 Comparative Communist Systems. General introduction to the political systems of communist states with special emphasis on Eastern Europe. Attention given to the role of ideology, the character and role of the party, and major decision making structures and processes. Elective Pass/Fail.
354-3 Political Violence. Comparison of several forms of political violence: war, revolution, terrorism, assassination, urban guerrilla warfare. The national and individual correlates of violence will be studied. Elective Pass/Fail.
366-3 Introduction to Latin American Government and Politics. A general introduction to Latin American government as the institutionalized political expression of Latin American

civilization and culture. Does not require a reading knowledge of Spanish or Portuguese. Elective Pass/Fail.

371-3 International Political Economy. Political dynamics of international trade, finance, investment, multinational corporations, energy, development, world wealth distribution, technology transfers. Politics of economic relations between East and West, rich and poor. Assumes that the political system shapes the economic system, that political concerns often shape economic policy, and that international economic relations are political relations. Prerequisite: none; 270 or economics course recommended.

373-3 International and Transnational Organizations. The growth and role of international organizations, with special attention to the political effects of military, economic and ecological interdependence. The United Nations, regional organizations, and nongovernmental organizations. The effects of these organizations on international peace and justice. Prerequisite: none; 270 recommended. Elective Pass/Fail.

378-3 Introduction to American Foreign Policy. An investigation of the means by which American foreign policy is formulated and executed and an analysis of the most significant challenges confronting America abroad. Elective Pass/Fail.

382-3 The New Politics of Europe. International politics of Europe. Comparative analysis of the foreign policies of the major states. Topics studied include nationalism, unification, and security, western Europe's relations with the developing world, Eastern Europe, the USSR, and the U.S. Elective Pass/Fail.

383-3 International Relations of Communist States. History and analysis of the foreign policies principally of the Soviet Union and China, with some attention to Eastern Europe, North Korea, Vietnam, and Cuba. Prerequisite: 353 or GE-B 250 or consent of instructor. Elective Pass/Fail.

390-1 to 6 Readings in Political Science. In-depth, introductory and advanced readings in areas not currently covered in other political science courses. Student must choose a faculty member to direct reading and must obtain consent prior to registration. Fifteen hundred pages of reading per credit hour recommended. Name of faculty member must be filed with the undergraduate adviser of the department at registration. Prerequisite: consent of instructor prior to registration.

395-1 to 12 Internship in Public Affairs. Supervised field work in the office of a governmental agency, political party, interest group, legal agency, or other public affairs-oriented organization. A faculty-supervised paper is required in which the student relates the academic and internship experiences. Students must choose a faculty member to direct internship and obtain consent prior to registration. Name of faculty member must be filed with undergraduate adviser of the department at registration. Political Science 395 is open only to students who are confirmed Political Science majors or minors. Students must have taken at least two courses in the department with a minimum grade point average of 2.5 in these courses. No more than six hours may be counted toward a departmental major. A written description identifying the specific organization, the projected tasks, and responsibilities of the intern should be prepared prior to meeting with the faculty sponsor.

403-4 Philosophy of Politics. (See Philosophy 441.) Elective Pass/Fail.

404-3 History of Political Theory. Shall survey different theorists and perspectives which have contributed significantly to the development of the ongoing tradition of political theory up to modern times. Prerequisite: 303 or consent of instructor. Elective Pass/Fail.

405-3 Democratic Theory. An examination of various species and aspects of democratic thought, including the liberal tradition and its impact upon the United States. Prerequisite: GE-B 212 or consent of instructor. Elective Pass/Fail.

406-3 Socialist Thought. An examination of socialist thought regarding social structure, economic institutions, and political power. Prerequisite: senior or graduate standing or consent of instructor. Elective Pass/Fail.

408-3 Contemporary Political Theory. Shall explore the theorists and perspectives which have contributed to contemporary views of the political world. Prerequisite: 303 or consent of instructor. Elective Pass/Fail.

413-3 Modern Federalism. The structure and function of federal systems of government with emphasis on recent revisions in American federalism and comparison of the American federal structure with federalism in other nations. Elective Pass/Fail.

414-3 Political Systems of the American States. The state level of government viewed with emphasis upon recent developments and current research. Prerequisite: 213. Elective Pass/Fail.

415-3 Urban Politics. An examination of the environment, institutions, processes, and functions of government in an urban society with particular emphasis on current problems of social control and the provision of services in the cities of the U.S. Prerequisite: 213. Elective Pass/Fail.

416-3 Senior Seminar in Politics. Seminar for advanced undergraduate students to examine in depth a wide variety of topics; to be taught by different instructors. Available for use as the honors seminar. Graduate students not admitted. Prerequisite: 200 recommended. Elective Pass/Fail.

417-3 Political Psychology. An examination of various psychological theories as they relate to the development and change of political attitudes, leadership behavior, and mass political participation. Prerequisite: 200 recommended. Elective Pass/Fail.
418-3 Political Communications. (See Speech Communication 451.) Elective Pass/Fail.
419-4 Political Sociology. (See Sociology 475.) Elective Pass/Fail.
428-3 Government and Labor. (See Economics 436.) Elective Pass/Fail.
433-8 (4, 4) Constitutional Law. **(a)** This, the intitial course in a two-course sequence, will be concerned with the basic structure and power relationships in the American constitutional system and, in addition, will cover the 19th and early 20th century bulwarks of constitutional *laissez faire,* the contract clause and "substantive" due process. In brief, the course will cover judicial review, judicial restraint, separation of powers, the federal system, national powers, state powers, constitutional amendments, and restraints on economic powers, the contract clause and "substantive" due process. Prerequisite: GE-B 212. Political Science 330 is recommended. Elective Pass/Fail. **(b)** This is the second course in the constitutional law sequence. The course will be wholly concerned with those provisions of the Constitution which protect individual rights and liberties against governmental encroachment. In brief, the course will cover constitutional provisions and case precedents relating to citizenship, freedom of speech, assembly, and association, freedom of religion, rights of persons accused of crime, protection against racial, ethnic, and other forms of discrimination, legislative apportionment and the electoral process. Prerequisite: GE-B 212. Elective Pass/Fail.
435-3 Judicial Process and Behavior. An examination of the process by which judges in both trial and appellate courts at federal and state levels are selected and of the ways in which they make decisions. Attention to the structure of the courts. Study of the communication and impact of judicial decisions. The course will provide some insight into the methods used to study judicial behavior. Elective Pass/Fail.
436-3 Administrative Law. The procedural law of public agencies, particularly the regulatory commissions but also executive branch agencies exercising regulatory functions. The exercise of discretion and its control through internal mechanisms and judicial review. Prerequisite: an ability to read court cases; 340 also preferred. Elective Pass/Fail.
437-3 Jurisprudence (Theories of Law). Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights. Elective Pass/Fail.
441-3 Administration of Bureaucratic Organizations. A study of the elements of bureaucratic organization and of problems and procedures in administration of complex public agencies. Emphasis is placed on the personnel aspects of public bureaucracy, including the history and structure of civil service systems, conditions of public service employment, and issues in leadership and supervision. Prerequisite: 340 or consent of instructor. Elective Pass/Fail.
443-3 Public Financial Administration. An examination of governmental revenues and expenditures, with emphasis on state and local governments. Special attention is given to patterns of taxation and expenditure, intergovernmental fiscal relations, municipal debt, and administrative decisionmaking. Prerequisite: 213 recommended. Elective Pass/Fail.
444-3 Policy Analysis. An examination of basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy, and instruments of policy development. Elective Pass/Fail.
445-4 Administration of Environmental Quality and Natural Resources. (Same as Geography 426.) An examination of institutional arrangement and administrative practices in the protection and use of land, water, air, and mineral resources. The course includes analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act, and the Surface Mining Reclamation Act. Elective Pass/Fail.
447-4 to 5 (3, 1 or 2) Urban Planning. (See Geography 470a, b.) Elective Pass/Fail.
451-3 Ascriptive Politics: Gender, Race, Ethnicity. (Same as Black American Studies 445 and Women's Studies 447.) Comparative analysis of ascriptive factors in participation, organization, leadership recruitment and selection, stratification and mobility, policy formulation and implementation, judicial decision-making, and political change. Elective Pass/Fail.
452-3 The Politics of Developing Areas. A comparative study of the principal features of traditional, transitional, and modern political systems, patterns of political socialization and culture as well as leadership recruitment and client-patron relationships in traditional and transitional political systems, the nature of political participation in predominately agrarian societies, and the strategies utilized to rule and to legitimize the rule of predominately post-colonial societies. Prerequisite: GE-B 250 recommended. Elective Pass/Fail.
454-3 Comparative Urban Politics. Comparative analysis of urban political systems in the United States and other nations. Attention to the social environment, political structures,

political processes, and public policies of selected urban areas. Prerequisite: none. 213 recommended. Elective Pass/Fail.

455-3 Comparative Public Administration. Administrative attitudes, behaviors, and institutions are compared on a topical basis in governments of Britain, Europe, the United States, Japan, and selected socialist, developing, and ancient states. Elective Pass/Fail.

457-3 Great Britain and the Commonwealth. The nature of the Commonwealth Association and the politics of Great Britain and the "Old Commonwealth" countries: Australia, Canada, New Zealand. Prerequisite: none. GE-B 250 recommended. Elective Pass/Fail.

458-3 Governments and Politics of Europe. A comparative study of the political systems of the major countries of Western and Central Europe. Prerequisite: none. GE-B 250 recommended. Elective Pass/Fail.

459-3 Government and Politics of Soviet Russia. Dynamics of Soviet government and economy. Prerequisite: none. GE-B 250 recommended. Elective Pass/Fail.

461-3 Governments and Politics of Southeast Asia. Politics and governments of Burma, Thailand, Malaysia, Vietnam, Cambodia, Laos, Singapore, Indonesia, and the Philippines. Prerequisite: none. GE-B 250 recommended. Elective Pass/Fail.

462-3 Governments and Politics of Vietnam. Development of political groupings since the period of French domination. Role of the religious sects and the private armies. Constitution and the legal and political system of Vietnam. Prerequisite: none. GE-B 250 recommended. Elective Pass/Fail.

463-3 Government and Politics of China. Internal political, economic, and social development of China. Prerequisite: none. GE-B 250 recommended. Elective Pass/Fail.

464-3 Governments and Politics in the Middle East. Internal and international politics of the Islamic states of the Middle East and North Africa and Israel. Prerequisite: none. GE-B 250 recommended. Elective Pass/Fail.

465-3 Governments and Politics of Sub-Saharan Africa. (Same as Black American Studies 465.) An examination of the impact of western colonial rule on the societies and politics of Africa, the methods by which these colonial areas became sovereign states in the post-World War II era, the role of domestic political institutions, African political thought and behavior, and the development of foreign policies regarding relations with other African states, continental and international organizations, and non-African states. Prerequisite: 452 or GE-B 250. Elective Pass/Fail.

466-4 Governments and Politics of Latin America. An in-depth analysis of specific problem areas in Latin American political processes as well as comparative study of selected Latin American nation-states. Prerequisite: none. 366 recommended. Elective Pass/Fail.

468-3 Comparative Civil-Military Politics. A comparative study of the growth of the relationship of the armed forces with the civilian sector of the body politic, the selection, training, and professionalization of the officer corps, the control of the armed forces by the executive and legislature, the growth of strategic doctrine, insurgency and counter-insurgency warfare, and the analysis of the role of the armed forces as a governing group in a large number of non-western states. Prerequisite: GE-B 212 or 250 or Political Science 452. Elective Pass/Fail.

475-6 (3, 3) International Law. (a) Rules and practices governing the nations in their relations in peace and war. Prerequisite: none. 270 recommended. (b) Investigation of special problems in international law. Prerequisite: 475a. Elective Pass/Fail.

477-3 The Making of American Foreign Policy. An advanced course dealing with the formulation and administration of American foreign policy. Prerequisite: none. 378 recommended. Elective Pass/Fail.

480-3 International Politics. Definition and analysis of the concepts of spheres of hegemony, alliances, regionalism, integration, interdependence, and an evaluation of their application to contemporary international politics. The course will stress the need for the continuing evaluation of the vague role of national power and influence within the framework of a changing world environment. Elective Pass/Fail.

485-3 International Relations of the Far East. The political and strategic problems and the interplay of the foreign policies of the major powers in this area. Prerequisite: none. 270 recommended or History 380 recommended. Elective Pass/Fail.

488-3 International Relations of the Western Hemisphere. Emphasis on the international behavior of Latin American nation-states and/or regions especially related to policy trends and historical and contemporary objectives of the U.S. Prerequisite: none. 270 recommended. Elective Pass/Fail.

494-1 to 6 Honors Research. Directed research for senior government honors students. Not for graduate students. Prerequisite: consent of instructor and chairperson. Student must have at least a *B* average in political science.

500-3 Pro-Seminar in Research Methods.

501-3 to 9 (3 per topic) Research Methods.

502-3 to 6 Topical Seminar in Research Methods.

503-3 Data Preparation and Management.

504-3 Pro-Seminar in Political Theory.

505-3 to 6 (3, 3) Topical Seminar in Normative Theory.
508-3 to 6 (3, 3) Topical Seminar in Empirical Theory.
510-3 Pro-Seminar in American Politics.
511-3 to 6 (3, 3) Topical Seminar in American Politics.
514-3 Seminar in American State Politics.
515-3 Seminar in Urban Politics.
516-3 to 6 (3, 3) Seminar in Political Behavior.
518-3 Seminar in Political Parties.
521-3 Seminar in the Legislative Process.
530-3 Pro-Seminar in Public Law.
538-3 Seminar in the Judicial Process.
540-3 Seminar in Public Management.
541-3 Seminar in Applied Problems of Public Administration.
542-3 Public Budgeting and Fiscal Management.
543-3 Public Personnel Management.
544-3 Program Analysis and Evaluation.
545-3 Organization Theory and Behavior.
547-6 (3, 3) Topical Seminar in Public Administration.
550-3 Pro-Seminar in Public Administration.
560-3 Pro-Seminar in Comparative Politics.
568-3 Seminar in Comparative Analysis.
569-3 to 6 (3, 3) Topical Seminar in Comparative Politics.
570-3 Pro-Seminar in International Relations.
573-3 Seminar in International Organization.
575-3 Seminar in International Law.
577-3 to 6 (3, 3) Topical Seminar in Foreign Policy.
580-3 to 6 (3, 3) Topical Seminar in International Relations.
590-1 to 6 Readings.
591-1 to 6 Individual Research.
593-1 Preprofessional Seminar in Political Science.
594-1 to 6 Research Report in Public Affairs.
595-1 to 6 Internship in Public Affairs.
599-1 to 6 Thesis.
600-1 to 36 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Professional Education Experiences

Student Teaching

Student teaching, together with the seminar in professional education, constitutes a full professional commitment on the part of the student and is a full professional semester of experience in the field carrying 15 hours of credit. Additional course work may be taken only on an overload basis with special permission from the coordinator of professional education experiences.

The student teacher must follow the same daily schedule as the cooperating teacher with whom the student is placed. This means that the student teacher remains in the school for the entire day, as well as participating in whatever extracurricular activities might be the responsibility of the cooperating teacher.

Students majoring in elementary education will be assigned to work with a cooperating teacher in one of the elementary grades, one through six, in an affiliated school. Students majoring in early childhood education will be assigned to work with a cooperating teacher in a kindergarten or primary grade, one through three, in an affiliated school.

The student who majors in a secondary school subject field which has an approved program in the teacher education program will be assigned to work with a cooperating teacher in a secondary school, grades seven through twelve, whose teaching assignment is consistent with the student's teaching major.

Special education majors will be assigned to work with a cooperating teacher in the appropriate special area: mental retardation, behavioral disorders, or learning disabilities. Special education majors will be assigned at both the elementary and

secondary levels in order to meet certification requirements. Students majoring in speech pathology and audiology will be assigned to a cooperating teacher who is a speech clinician in an affiliated school.

Students wishing to enroll in the professional semester during the fall or spring semester of the academic year must file an application with the Office of Teacher Education, Wham Building, Room 135, at least one semester in advance of the semester during which they wish an assignment. The professional semester program during the summer session is restricted to those individuals who hold either a provisional teaching certificate or a teaching certificate in a field other than the one for which they are seeking certification. Participation in this program is also dependent upon the availability of suitable placements in the summer school programs of participating public schools.

Applications for both regular academic year and special summer participation are available in the Office of Teacher Education, Wham Building, room 135.

The student must register for the professional semester following normal registration procedures. Registration will include the following courses: Education 400, 4 hours, Education 401, 8 hours, and Education 350, 3 hours. Students will register for the sections of these courses designated for their majors. Registration during the summer session is by restricted class card for Education 402, 5-8 hours.

PLACEMENT OF STUDENT TEACHERS

Student teaching under the supervision of Southern Illinois University at Carbondale faculty is conducted in professional education centers in affiliated schools in the southern Illinois area as well as in specific locations throughout the state. A current listing of specific schools to which student teachers may be assigned is available in the Office of Teacher Education.

In so far as numerical limits will permit, students will be assigned to the location of their choice. However, if the limits have been met, students are advised that they may be assigned to any of the centers which can suitably accommodate them.

Students are advised to make no binding housing commitments during the professional semester until they have received verification of their student teaching assignments. Such housing commitments will not be considered when students are assigned.

PROFESSIONAL SEMESTER – (STUDENT TEACHING) PREREQUISITES

1. Students must have achieved formal acceptance into the teacher education program and must present their records of acceptance when applying for the professional semester.
2. The student is responsible for having all transcripts of credit earned at colleges or universities other than Southern Illinois University at Carbondale on file with the coordinator in the Office of Teacher Education. These must be on file by the tenth day of the semester for which the student is applying.
3. Prior to the professional semester, the intern must have completed a minimum of 20 semester hours in the subject area to be taught. The course work involved must meet the approval of the department chairperson of that major department. (Course work and/or performance required may be obtained from the department concerned.) An up-to-date list of approved majors in the teacher education program may be found in the booklet, *The Teacher Education Program,* or requested from the Office of Teacher Education.
4. The student must have completed a minimum of 100 clock hours of pre-student teaching field experiences.
5. The student must have completed 75 semester hours of credit with a

minimum cumulative average of 2.25 before beginning work in student teaching.

6. Each of those courses which are a part of the professional education sequence prior to the professional semester must have been completed with a grade of *C* or better. (Education 301, 302, 303, 304 and 312. The following courses are approved substitutes for Education 312 as a part of the professional education requirements for the majors indicated: Music 304 and 306 for music majors; Speech Communication 230 and 390 for speech majors; and Communication Disorders and Sciences 494, 495, and 496 for communication disorders and sciences.)
7. The student must have completed GE-D 101 and GE-D 117, 118, or 119 or GE-D 120, and one additional English course (GE-C, GE-D, or English department) with a grade of *C* or better in each of the last two courses completed.
8. The student must have completed the special methods class required for the major prior to the professional semester.
9. Every student teacher must have a health clearance from the University Student Health Program. The health clearance consists of a tuberculin test. If it is not convenient to come to the health service in Carbondale, students may have a tuberculin test by their own medical doctors. A record of the health clearance must be on file in the Office of Teacher Education by the tenth day of the semester immediately preceding the student's professional semester.
10. The student must have established at least one semester of residence at Southern Illinois University at Carbondale, earning a minimum of 12 semester hours of credit, prior to any professional semester assignment.

Field Experiences Other Than the Professional Semester

Other field experiences for students in the teacher education program are provided in Education 302 and Education 312. Applications for these courses are available in the Office of Teacher Education.

Psychology (Department, Major, Courses)

The undergraduate major in psychology is primarily aimed at providing broad general education rather than specialized professional training in psychology. To become a professional psychologist usually requires the completion of two to four or more years of postgraduate study.

Students planning to complete a major in psychology must formally declare their intention with the supervisor of the undergraduate curriculum in the Department of Psychology, Room 229, Life Science II. The declaration should be made as early as possible.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements 45
Supplementary College Requirements (See Page 75) ..... (4) + 8-14
Requirements for Major in Psychology 28-30
- GE-B 202 ..... (3)
- Mathematics 139 ..... (3)
- Psychology 211 4
- Psychology electives: (8 courses) 24-26

  The electives must be distributed so at least three courses are chosen from Group A and three from Group B. At least one course must be chosen from 311, 312, 314, 315, 316. At least two of the selections must be at the 400 level.

Group A: 301, 303, 304, 305, 307, 316, 320, 322, 323, 333, 421, 431, 432, 440, 451, 459, 461, 463
Group B: 309, 310, 311, 312, 314, 315, 404, 407, 409, 411, 415
Psychology 391, 392, 394, 399, 489, and any of those in the above two groups may be used to satisfy the remaining two nondistributed electives. Refer to course descriptions for limitations.

Electives 31-39
Total 120

Minor

A minor in psychology consists of 15 hours (a minimum of five courses) of psychology courses from those acceptable for the major.[1]

Senior Honors Program

A small number of students is selected each year for the honors program. Selection criteria are promising academic performance (3.0 overall grade point average and 3.25 psychology grade point average minimum), expressed interest, recommendation by departmental adviser, and capacity of program to take new students. Emphasis is on small seminar and individual research work by the student.

Courses

211-4 Research Methods in Psychology. An introduction to the application of scientific methods to the study of behavior. Experimental design and methodology and correlational procedures are considered. Considerations of data analysis and interpretations are integrated with the treatment of design and methodology. Lecture and laboratory. Prerequisite: GE-B 202.
301-3 Child Psychology. The biological and psychological development of the child from birth through puberty, and relevant research methods and results. Prerequisite: GE-B 202. Elective Pass/Fail.
302-3 Psychobiology. A survey of the role of biological processes in the behavior of humans and other species. Topics include structure and function of the nervous system, behaviorial endrocrinology, psychopharmacology, sensorimotor functions, sleep and waking, motivation and emotion, reinforcements, psychopathology, and learning and memory.
303-3 Adolescent Psychology. Examines the physical and psychological development of the adolescent, and the relevance of childhood development to adolescent problems. Prerequisite: GE-B 202. Elective Pass/Fail.
304-3 Psychology of Maturity and Old Age. A consideration of psychological factors in later maturity and old age, and their concomitant problems, both individual and social. Prerequisite: GE-B 202. Elective Pass/Fail.
305-3 Psychology of Personality. The inferred patterns underlying an individual's unique reactions to the environment. Investigates the motivation, development, and methods of changing these patterns, and how personality processes are studied. Prerequisite: GE-B 202. Elective Pass/Fail.
307-3 Social Psychology. Introduction to the area of social psychology. Considers methodology, person perception, interpersonal attraction, attitude formation and change, social influence, group processes, intergroup conflict, and other contemporary issues in social psychology.Prerequisite: GE-B 202. Elective Pass/Fail.
309-3 Psychology of Learning. Principles and laws of learning as derived from the classical and instrumental learning literature — acquisition, extinction, punishment, persistence, generalization, discrimination, motivation, drives, and incentives. Prerequisite: 211.
310-3 Cognitive Psychology. A survey of theory and research on attention, memory, language behavior, and problem solving. The principal orientation will be the information processing approach to the study of behavior. Prerequisite: GE-B 202.
311-3 Experimental Psychology: Learning. Investigates the processes governing behavioral change covered in 309. Experimental studies of conditioning, memory, and forgetting will be emphasized. Laboratory work will include the design and conduct of experiments with humans and/or animals. Prerequisite: 309.
312-4 Experimental Psychology: Perception. Investigates the variables influencing an organism's stimulation by the environment. The structure and operation of the sense organs as well as complex perceptual phenomena are examined in lectures and laboratory. Prerequisite: 211.

[1]Students completing a minor in psychology for purposes of obtaining teacher certification in the State of Illinois must complete a minimum of 18 semester hours in the minor area.

314-3 Experimental Physiological Psychology. A survey through readings and laboratory exercises, of selected topics in physiological psychology. The biological bases of sexual behavior, motivation, and memory are emphasized. Prerequisite: Psychology 211.
315-3 Experimental Psychology: Cognitive Processes. The student conducts three or four experiments in cognitive psychology. The first experiments are described in detail by the instructor; the final experiment is one of the student's own design. Prerequisite: 211, 310.
316-3 Experimental Psychology: Social. A laboratory and lecture course designed to familiarize the student with basic research methodology in experimental social psychology. Prerequisite: 211, 307.
320-3 Industrial Psychology. A study of the use of psychological methods in the analysis of human factors problems in business and industry. Prerequisite: GE-B 202. Elective Pass/Fail.
322-3 Personnel Psychology. Covers the use of psychological methods in the analysis of jobs and in the selection, placement, and evaluation of personnel in business and industry. Prerequisite: GE-B 202. Elective Pass/Fail.
323-3 Psychology of Employee Relations. Job satisfaction and morale, psychological aspects of labor relations, interviewing methods, and human relations training. Prerequisite: GE-B 202. Elective Pass/Fail.
333-3 Psychology of Women. (Same as Women's Studies 341.) An examination of empirical evidence on the biological, psychological, and social functioning of women, describing women's roles, the genetic versus social determinants of women's behavior, and the implications for women's potential. Prerequisite: GE-B 202 or consent of instructor. Elective Pass/Fail.
391-1 to 9 Individual Project. Individual study, research or experience under the supervision of a member of the Department of Psychology faculty. A maximum of three hours of 391 or 392 may count toward the major or minor. Prerequisite: consent of instructor. Mandatory Pass/Fail.
392-1 to 9 Individual Project. Individual study, research or experience under the supervision of a member of the Department of Psychology faculty. For use in those cases where the faculty member deems a graded course to be appropriate. A maximum of three hours of 391 or 392 may count toward the major or minor. Prerequisite: consent of instructor.
394-1 to 9 Undergraduate Practicum in the College Teaching of Psychology. Supervised practicum in the college teaching of psychology for selected senior psychology majors. (A maximum of three hours may count toward the major.) Prerequisite: senior psychology major and permission of instructor.
399-1 to 9 Research and Investigation: Honors. Intensive study in selected areas for students qualified for honors work in psychology. A research paper or equivalent will be required. Prerequisite: consent of chairperson.
404-3 Theories of Perception. An examination of the different theories concerned with an organism's sensory contact with the environment. Physiological, social, and organizational theories of perception will be considered. Prerequisite: 211 or consent of instructor.
407-3 Theoretical Issues in Learning. An introduction to the major theoretical issues in learning and their importance. A brief review of the history of such problems will be followed by a summary of the current research concerning these issues. Traditional figures in learning theory will be considered within the context of their positions on specific questions. Prerequisite: 309 or equivalent.
409-3 History and Systems of Psychology. A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: senior status.
411-3 Principles of Training. An in-depth coverage of practical problems concerned with training to which the principles of learning derived from pure laboratory investigations can be applied. Prerequisite: 309.
415-4 Psychopharmacology. A survey of the effects of drugs on the normal and abnormal behavior of humans and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous and endocrine systems. Prerequisite: GE-B 202. Elective Pass/Fail.
421-3 Psychological Tests and Measurements. Introduction to test theory and test development. Detailed coverage of selected tests from such areas as intelligence, aptitude, and personality. Prerequisite: six hours of psychology.
431-3 Psychopathology. Classification, description, etiology, and treatment of the disorders of personality organization and behavioral integration. Observations in a state mental hospital setting. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.
432-3 Psychopathology of Childhood. An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: 301, and 211 or Guidance and Educational Psychology 422.
440-3 Theories of Personality. A review and evaluation of major personality theories and their supporting evidence. Prerequisite: 305 or consent of instructor. Elective Pass/Fail.

445-4 Introduction to Psycholinguistics. (See Linguistics 445.) Elective Pass/Fail.
451-3 Advanced Child Psychology. An assessment of concepts, methods, and research techniques within selected topic areas of developmental psychology. Prerequisite: 211 and 301, or consent of instructor.
459-3 Theory and Practice in the Preschool. Designed for those interested in the education of the preschool-aged child. Examines a variety of topics and provides lectures, demonstration, and practicum experience in the Child Study Cooperative Nursery. Prerequisite: consent of instructor.
461-3 Advanced Social Psychology. Examines in depth current research in experimental social psychology. Emphasis is placed on topics such as person perception, interpersonal attraction, attitude formation and change, social influence, group processes, intergroup conflicts. Not for psychology graduate students. Prerequisite: 211, 307.
463-3 Attitudes: Theory and Measurement. Surveys social psychological theories of attitudes and techniques of attitude scale construction. Students work with existing data files and design and test original scales. Prerequisite: 307.
465-3 Need Assessment Techniques for Mental Health Planning. Surveys methodological techniques for assessing the need for mental halth services including developing a resource inventory, use of census and other social indicator data, rates under treatments, community and consumer surveys, hearing and site visits. Attention is also paid to method of presenting results of need assessments to lay boards. Prerequisite: senior standing in psychology major, or graduate status, or consent of instructor.
489-1 to 12 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: consent of instructor.
510-3 Learning Processes.
511-3 Human Learning and Memory.
512-4 Sensory Processes.
513-3 Human Psychophysiology.
514-4 Neurobiological Bases of Behavior.
515-3 Theory and Research in Cognitive Psychology.
520-3 Applications of the Psychology of Learning and Memory.
522-8 (4, 4) Experimental Design and Analysis.
523-3 Research Methods in Clinical Psychology.
524-3 Multivariate Methods in Psychology.
525-3 Mental Test Theory.
526-3 Research in Counseling Psychology.
527-3 Theory and Methods of Scaling.
528-3 Decision Analysis: Techniques for Aiding Decisions.
530-4 (2, 2) Systems of Personality and Psychotherapy.
531-3 to 6 Community and Institutional Field Placement.
532-2 Experimental Approaches to Personality.
533-2 Experimental Approaches to Psychopathology.
534-3 Principles of Behavior Therapy.
535-3 Psychopathology.
536-4 Fundamentals of Counseling.
538-3 Theory and Practice of Group Facilitation.
539-3 Experimental Approaches to Psychotherapy.
540-3 Psychological Assessment.
542-3 Principles and Problems in Personality Assessment.
547-3 Appraisal in Counseling.
548-3 Vocational Psychology and Career Development.
549-3 Behavioral Assessment.
551-3 Advanced Developmental Psychology I.
552-3 Advanced Developmental Psychology II.
554-3 Developmental Theories.
555-3 Language and Cognition.
556-2 Psychological Treatment of the Child.
557-2 Family Psychotherapy.
558-3 Personality and Social Development of Adults.
564-3 Program Evaluation: Experimental and Quasi-Experimental Approaches.
571-6 (2, 2, 2) Proseminar in Applied Experimental Psychology.
576-3 Human Engineering.
585-1 to 18 Advanced Seminar.
590-1 to 12 Readings in Psychology.
593-1 to 24 Research in Psychology.
594-1 to 16 Practicum in Psychology.
595-1 to 12 Internship.
596-3 Behavior Therapy Practicum.

597-1 to 15 Preprofessional Training.
598-3 Ethical and Professional Problems in Psychology.
599-1 to 6 Thesis.
600-1 to 24 Dissertation.
601-1 to 12 per semester Continuing Research.

Public Visual Communications (Courses)

Courses

599-3 to 6 Thesis.
601-1 to 12 per semester Continuing Research.

Radio-Television (Department, Major, Courses)

The Department of Radio-Television prepares students for positions in broadcasting and telecommunications by combining practical and theoretical courses in broadcasting with a broad liberal arts background.

The core courses, Radio-Television 300m and 300p, must each be completed with a grade of *C* or better and the typing, English, and language requirements described below must be met before students will be formally accepted as majors in the department. Students who meet these requirements must also complete Radio-Television 305, 308, 340, and 393 with a grade of *C* or better.

Each student enrolled in the radio-television program must complete by the end of the sophomore year or, if a transfer student, by the end of the first semester of enrollment at Southern Illinois University at Carbondale:

1. GE-D 101 and GE-D 117 or 119 with a grade of *B* and, if student receives less than a *B* in either GE-D 101 or GE-D 117 or 119, English 290 with a grade of C;
2. A departmentally administered typing test at a minimum speed of 30 words per minute, or attain a grade of *B* or better in Secretarial and Office Specialties 100.
3. Radio-Television 300m and 300p with a grade of *C* or better before enrolling in any other radio-television course. Students must have completed twenty-six semester hours of credit before taking Radio-Television 300m and 300p. These courses may not be repeated more than once.

Transfer students must complete a minimum of 19 hours in radio-television courses at Southern Illinois University at Carbondale to earn a degree.

Bachelor of Arts Degree, College of Communications and Fine Arts

General Education Requirements	45
Requirements for Major in Radio-Television	46
Radio-Television 300m, 300p, 305, 308, 340, 393 with a grade of *C* or better are required. Must include at least one 400-level radio-television course. Radio-Television electives to bring total in the department to 38	38
Language Requirement. A foreign language or computer programming must be selected to meet this requirement.	8
Minor in a Related Area	15
All 15 hours must be in a single department beyond General Education courses. Students should check with departmental advisers for a list of recommended minors.	
Electives	14
Total	120

Courses

200-3 Understanding Radio and Television. Review of responsibilities of television viewers and radio listeners, critical viewing and listening of radio and television programs. Analysis of techniques and content of programs. Lecture, discussion, critical review. Not for majors in radio-television. Credit will not count toward the major. Not open to students with credit in 300M or 300P.

300M-4 Radio-Television Writing Performance Production. Introduction to the functions, theories, materials and techniques of writing, performing, and production for radio and television. Students write, perform, and produce in radio and television studio laboratories. Extra fee for books and supplies $10. Note: Radio-Television 300M and 300P are both prerequisites for all other courses. Students must attain a grade of *C* in these courses before taking other courses in the department. Prerequisite: sophomore standing.

300P-4 History and Foundations of Radio-Television. Basic communications theory as applied through the history, economics, government regulation of the American system of broadcasting, and in broadcasting programming and audience analysis. Prerequisite: sophomore standing.

305-2 Audience Research and Ratings Analysis. The interrelationships of programs and audiences. Methods of audience and program research. Ratings analysis, station surveys. Survey of relevant research in radio-television. Prerequisite: *C* in 300M and 300P.

308-3 Radio-Television Policies, Laws, and Regulations. Development of American radio and television policies from their constitutional base through federal law, regulatory agencies, and the judicial system. Rights and responsibilities of radio and television organizations and of the public. Required for majors. Prerequisite: *C* in 300M and 300P.

310-3 Radio-Television News Writing. Selecting, writing, rewriting, and editing news material for presentation on radio and television information programs. Laboratory hours required. Prerequisite: *C* in 300M and 300P.

311-3 Radio News. The basic techniques of writing, rewriting, and editing news from local and wire service sources, plus reporting and editing by means of audio tape. Students must have daily access to an audio tape recorder and are encouraged to obtain their own cassette recorder. Laboratory hours required. Prerequisite: *C* in 300M and 300P, 310 or consent of instructor.

325-3 Survey of Cable Communications. History and projections of CATV industry growth, patterns of regulation and use. Relation of cable communications to other media, and to society. Extensive readings and discussion of the literature. Prerequisite: *C* in 300M and P.

335-3 Cable Television Programming and Management. Presents theoretical approaches to programming decisions by local cable systems and cable programming services. Examines management issues affecting cable television on local and national levels. Prerequisite: *C* in 300M and 300P and 325.

340-3 Television Criticism. History and analysis of television genres. Analysis and evaluation of technique, content, and aesthetic effect of television messages. Extensive reading in critical literature, written assignment. Required for majors. Prerequisite: *C* in 300M and 300P.

351-3 Broadcast Programming. Discussion and analysis of radio and television programming formats, strategies, and scheduling. Prerequisite: *C* in 300M and 300P, 305 or consent of instructor.

360-4 Radio-Television Performance. The development of disciplines controlling vocal and visual mechanics and interpretative performance for announcers, newscasters, interviewers, and narrators of various radio and television situations. Laboratory hours required. Prerequisite: *B* or better in 300M, 310, or 383 or consent of instructor, Communication Disorders and Sciences 104, or Theater 203.

363-3 Producing for Radio. Planning and producing for the special requirements of the medium. Study of differing formats; production of short forms in laboratory exercises. Laboratory hours required. Prerequisite: 383 or consent of instructor.

365-3 Producing for Television. Planning and producing for the special requirements of the medium. Research, planning, and budgeting for individual and series productions. Laboratory exercises. Final projects carry over to 369. Laboratory hours required. Prerequisite: *C* in 300M and 300P, 383 or consent of instructor.

369-3 Directing for Television. Applications of communications theory and unique characteristics of the medium in directing televised productions. Laboratory hours required. Prerequisite: 363 and 365 with a grade of *B* or better or consent of instructor.

370-3 Television News. Techniques in writing, reporting, shooting, and editing utilizing small format ENG equipment. Students purchase a minimum of two half-inch videotape cassettes. Laboratory hours required. Prerequisite: 311 or consent of instructor.

377-3 Radio and Television Sales and Sales Management. A marketing approach to station and system sales. Use of ratings, RAB, TVB, and station promotion material. Includes

selling methods and techniques and sales management techniques (systems approach, inventory control, pricing). Prerequisite: 305 or consent of instructor.
383-3 Writing for Radio-Television. Experience in writing radio and television formats, and announcements — commercial, public service, and promotional. Develops critical awareness and analytical attitude toward broadcast writing, and stresses imagination and creative writing skills. Frequent written assignments in and out of class. Prerequisite: *C* in 300M and P.
384-3 (1, 1, 1) Radio-Television Practicum. Practical experience in broadcast operations on the campus. Instructor makes determination on student duties, based on needs of the Broadcast Service and the desires of the student. A minimum of four hours per week. Students obtain application form from academic adviser. Prerequisite: 14 hours in radio-television and consent of instructor. Mandatory Pass/Fail.
390-4 Radio and Television Management Principles. Objectives, procedures, policies, and costs in radio and television station development and operation. Prerequisite: 351 and 377 or consent of instructor.
391-2 Independent Study. Area of study to be determined by student in consultation with radio-television faculty. No more than two students may work on the same project. Prerequisite: 14 hours in radio-television and consent of instructor.
393-3 Radio, Television, and Society. The interrelation of radio and television with social patterns and economic and political systems. Major theories of broadcasting. Effects of these media on society. Required for major and should be taken during student's last semester. Prerequisite: *C* in 300M and 300P, 308 and 340; completion of 86 hours or consent of instructor.
395-4 Internship Program. News production, performance or management sales work experience with a non-university professional organization. The student will be provided an educational experience beyond that available at the University. No possibility of retroactive credit for previous work experience. Prerequisite: junior status, at least 14 hours in radio-television, grade point average of 3.0 or better in major, consent of instructor, and approval of undergraduate curriculum committee.
430-2 News and Public Affairs Programming. Examination of history and scope of news and public affairs programming. Effects of public affairs on programs and audiences. Responsibility of radio and television stations in news and public affairs and community relations. Issues in news and public affairs including ethics. Prerequisite: 370, senior standing.
453-2 Educational and Public Broadcasting. The history and regulatory structure of educational and public broadcasting in the United States today, with special emphasis on organizations regulated under the Public Broadcasting Act of 1967. Methods of funding public stations, programming, and careers in educational and public broadcasting considered. Prerequisite: *C* in 300M and 300P, 308, and senior standing.
467-3 Radio-Television in International and Agricultural Development. An examination of broadcasting theory related to rural audiences in the United States and abroad. History of farm broadcasting in the United States and abroad. Communications in development is explored. Research on effects on rural audiences. Open to non-majors with consent of instructor. Prerequisite: senior standing and *C* in 300M and 300P.
470-3 Television Documentary Field Production. Basic principles of television documentary field production, both technical and creative. Camera operation, lighting, sound recording, writing, producing, directing, and editing of video documentaries. Evaluation of documentary technique, form and content as it relates to video. Class will utilize 3/4" and 1" cameras, recorders, and editing systems. Prerequisite: 300, 365, 383.
481-3 Non-Broadcast Television. An examination of the special requirements of business, industrial, and medical uses of television. Management, budgeting, planning, and evaluating productions. Exploration of cable television, satellites and other technologies used in non-broadcast situations. Prerequisite: senior standing and 325, 365, or consent of instructor.
483-3 Advanced Radio-Television Writing. Exercises in writing broadcast manuscripts including documentary, drama, and children's programming. Prerequisite: senior standing and 340, 383, or consent of instructor.
489-2 to 6 Radio Television Workshop. Advanced work in various areas of radio-television and interrelated disciplines. Prerequisite: *C* grade in 300M, 300P, and consent of instructor.
491-3 Independent Study. Area of study to be determined by student in consultation with graduate faculty. No more than two students may work on same project. Students must complete an application form which is available from the departmental adviser. Prerequisite: senior standing and consent of instructor.
500-3 Introduction to Telecommunications.
510-3 Telecommunications Programming.
530-3 International Telecommunications.
532-3 Telecommunications Research.
570-3 Aesthetics of Telecommunications.
571-3 Telecommunications Policy.
573-3 Telecommunications Management.

580-3 Telecommunications Technology.
589-3 Telecommunications and Society.
591-3 Individual Study in Telecommunications.
595-3 Advanced Seminar: Telecommunications.
599-1 to 6 Thesis.
601-1 to 12 Continuing Research.

Radiologic Technology (Program, Major)

(SEE ALLIED HEALTH CAREERS SPECIALTIES)

Radiography is an allied health specialty concerned with the production of x-ray films which enable the physician to diagnose disease processes occurring in the human body. The course of study involves mastering the ability to control radiation production and the ability to position the body properly in order to obtain radiographs of the required anatomical structure.

The curriculum is designed to prepare students to become registered radiologic technologists. Completion of the program provides graduates with the educational requirements necessary to take the national certification examination administered by the American Registry of Radiologic Technologists.

To be accepted into the radiologic technology degree program the student must have completed the requirements for the allied health careers specialties program. These advanced radiologic technology courses combine classroom and clinical education, which upon completion allows the graduate to become registry eligible and to receive an Associate in Applied Science degree in radiologic technology.

The courses can be completed in two summer sessions and two regular semesters. The summer sessions and the regular semester sessions will utilize both classroom and clinical education learning experiences, along with elective courses.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Radiologic Technology

Completion of Allied Health Careers Specialties degree program	65
Radiologic Technology Advanced Courses (Allied Health Careers Specialties designated)	30
Electives	6
Total	101

Courses

(SEE ALLIED HEALTH CAREERS SPECIALTIES)

Recreation (Department, Major, Courses)

The Department of Recreation prepares the student for positions in the management of leisure services. The department builds its curriculum on a broad General Education foundation, offers professional and skills courses within the Department of Recreation, and draws from many related departments of the University for competencies and skills in the preparation of leaders for the recreation profession. The curriculum emphasizes the practical as well as the theoretical aspects of recreation by offering supervised field experience, and internships in various recreational settings throughout Illinois and the nation.

Students admitted to the Department of Recreation must meet the College of Education requirements and follow their procedures for acceptance. In order to be admitted to practicum courses, students must have a grade point average of 2.25 and the consent of the instructor. Students who do not meet the College of Education requirements must be screened and approved by the department undergraduate faculty.

Students majoring in recreation are required to complete 45 hours of General Education, 39 hours of professional core courses, 36 hours of professional courses in at least one area of specialization, and work closely with the department advisers in selecting electives for their chosen area of specialization. A total of 75 hours beyond General Education is required.

The Department of Recreation offers courses leading to specialization in therapeutic recreation and program services. A careful selection of recommended electives can be used to build competencies in recreation program services administration, outdoor recreation/education, and commercial/industrial recreation.

Students majoring in recreation should start early in their college careers developing skills and competencies in music, dance, arts and crafts, literature, sports and games, nature, drama, and other leisure and cultural areas. The American Red Cross first aid certificate and workshop certificates in recreation sponsored by the state and national recreation and park associations are encouraged for each student. Students focusing on a therapeutic orientation should attempt to acquire either academic or practical experience related to physiological, psychological and sociological functioning and the concomitant effect of disability. As soon as possible recreation majors will decide on one of the two specializations and elect courses for their areas of specialization. All undergraduate recreation majors will be advised by educational advisement until they have completed the General Education requirements. Recreation advisers are available to students to explain job opportunities and to outline required and elective courses in their chosen specialization.

Bachelor of Science Degree, College of Education

General Education Requirements		45
Requirements for Major in Recreation		75
English 290	3	
Six hours selected from Psychology 301, 303, 304, 305, 307, 320, 322, 323, 333	6	
Recreation 300, 302, 303, 365, 367, 380-4, 490	30	
One of the specializations listed below	34	
Total		120

PROGRAM SERVICES SPECIALIZATION

Recreation 331, 370, 375, 395, 425, 445, 465	20
Accounting 210	3
Electives	11
Total	34

THERAPEUTIC RECREATION SPECIALIZATION

Recreation 304, 460, 461, 462	12
Six hours selected from Recreation 440a, 440b, 440c, 440d, 440e	6
Physiology 210 or a physiology course approved by the department	3-5
Physiology 300 or 301	3-4
Psychology 431 or 432	3
Electives	4-7
Total	34

Minor

Students wishing to earn a minor in recreation must receive written approval from the Department of Recreation. Eighteen hours of course work is required including

Recreation 300, 302, 303, and 365, plus six hours chosen from any recreation courses.

Courses

300-3 Leisure and Recreation. An introduction to the professional field of recreation. A study of the historical, philosophical, sociological, psychological, and economic development of leisure and recreation. Insight into the fundamental concepts, values, and functions of leisure and recreation as an individual emotional experience as well as a necessary part of community life.
302-3 Recreation Program Leadership. A study of essential elements and basic principles involved with the organization and administration of various types of recreation programs and services. Emphasis on leadership processes and methodology.
303-3 Recreation For Special Groups. Problems and characteristics of special groups in society such as teenagers, aged, emotionally disturbed, mentally retarded, physically handicapped, prisoners, and delinquents. Emphasis on leadership processes, methodology, and program materials. Prerequisite: 300 or consent of department.
304-3 Principles and Practices of Therapeutic Recreation. Study of the existing practices and principles utilized in therapeutic recreation; professionalism; legislation; team approaches; activity analysis; supervision functions; community resources; special recreation programs. Prerequisite: 300, 302, 303.
310-10 (2, 2, 2, 2, 2) Recreation Skills. **(a)** Social recreation, **(b)** dramatics, **(c)** leisurecrafts, **(d)** music and dance, **(e)** playground activities. Prerequisite: 300, 302, 303 or consent of department.
320-3 Nature in Recreation. Acquaints the student with opportunities for the interpretation of the nature phenomenon. The avocational as well as the vocational aspect of nature will be stressed. Required field trip cost not to exceed $20. Prerequisite: 300, 302, 303 or consent of department.
330-3 Outdoor Education. Philosophy and principles underlying the programs and methods in modern outdoor education and school camp programs with emphasis on curriculum enrichment through our natural resources. Expenses for required field trip not to exceed $20. Prerequisite: 300, 302, 303 or consent of department.
331-3 Outdoor Living Skills. Development of techniques for teaching outdoor living skills necessary in a wide variety of recreation programs. The student will be presented with a sample of specific skills including cooking, use of hand tools, fire safety, and others. Methods for teaching various age groups such skills will be discussed. A laboratory charge of approximately $25 will be required. Prerequisite: 300, 302, 303 or consent of department.
335-3 Expedition Leadership. The skills and techniques needed to plan, organize and conduct expeditions such as overnight hikes, canoe trips, backpacking, field trips, and other types of expeditions. Expenses for required field trips not to exceed $50. Prerequisite: consent of instructor.
350-6 (1, 1, 1, 1, 1, 1) Recreation Workshops. Current innovations and critical evaluation of methods, materials, and supervision of programs in one of the following areas: **(a)** day camps, **(b)** puppetry, **(c)** storytelling, **(d)** leisurecrafts, **(e)** family, and **(f)** teen centers. Prerequisite: 300, 302, 303 or consent of department.
365-3 Park and Recreation Administration. Administrative procedures in park and recreation departments — organization, finance, personnel, facilities, program, public relations, and other areas of administration. Prerequisite: 300, 302, 303 or consent of department.
366-3 Workshop in Administrative Issues in Recreation. Designed to examine in a workshop current administrative issues in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies, and others. Prerequisite: 365.
367-2 Research and Evaluation in Recreation. An introduction to methodological approaches to the scientific study of phenomena inherent to recreation and leisure. The course includes basic research and evaluation designs, research and evaluation report writing, analysis of current leisure research, and use of computers in leisure research and evaluation. Prerequisite: 300, 302, 303.
370-3 Camp Management. Principles and procedures of selection and supervision of personnel, program planning, food preparation, health and safety, camp maintenance, evaluation, camp counseling, and other responsibilities of camp administration. Prerequisite: 300, 302, 303 or consent of department.
375-2 Commercial Recreation Management. Problems of commercial recreation related to the profit motive and the challenges and possibilities for public service. Opportunities are examined in such areas as civic centers, student unions, spas and resorts, marinas, ice and roller rinks, sports complexes, and other commercial enterprises. Prerequisite: 300, 302, 303 or consent of department.

380-1 to 4 Field Work in Recreation. Supervised leadership experiences in a public or private recreation setting. It is recommended that a student sign up for two hours per semester. Graduates must complete field experience in at least two areas of specialization. A maximum of six hours of credit may be earned. Prerequisite: 300, 302, 303 or consent of department. Mandatory Pass/Fail.

385-1 to 2 Readings in Recreation. Selected readings in professional publications for the purpose of becoming acquainted with the types of research current in community, park, special populations, outdoor recreation, outdoor education, and related fields. For recreation majors only. Prerequisite: 15 hours in recreation.

386-1 to 2 Problems in Recreation. Designed to enable students to effectively request funds, request personnel, initiate new programs, or support recreation leisure services. Prerequisite: 15 hours in recreation.

395-3 Maintenance of Recreation Areas and Facilities. All phases and principles of development, maintenance, and construction of areas and facilities used in a recreation setting. Stress is put on selection and supervision of maintenance personnel. There is a maximum cost of $5 for course materials in lieu of textbook. Prerequisite: 300, 302, 303 or consent of department.

401-3 Fundamentals of Environmental Education. (Same as Agriculture 401.)

423-3 Environmental Interpretation. (Same as Agriculture and Forestry 423.)

425-3 Planning Outdoor Areas for Recreation and Education. An examination of master plans for outdoor areas used in school and recreation programs. Principles of masterplanning and practical experience with the master plan will be correlated. Prerequisite: senior or graduate standing.

440-15 (3, 3, 3, 3, 3) Recreation Activities for Special Populations. Students will be made aware of problems and characteristics of special population groups. Emphasis is upon the role of therapeutic recreation with these groups in institutional and community settings: **(a)** Recreation for the mentally ill and emotionally disturbed. **(b)** Recreation for the mentally retarded. **(c)** Recreation for the aged. **(d)** Recreation for the socially deviate. **(e)** Recreation for the physically disabled. Prerequisite: 300, 302, 303 or consent of department.

445-3 Outdoor Recreation Management. Philosophy and principles underlying the growth and development of outdoor recreation management. Outdoor recreation is examined in terms of historical values, long range planning, site design, visitor needs, and environment impact. A laboratory cost of up to $14 may be required. Prerequisite: 300, 302, 303 or consent of department.

460-3 Therapeutic Recreation. Organization and administration of therapeutic recreation programs in hospitals, nursing homes, schools for the retarded, detention centers, prisons, and other institutions. Emphasis on programs for special populations in the community setting. Prerequisite: 300, 302, 303 or consent of department.

461-3 Program Design and Evaluation for Therapeutic Recreation. To equip the student with skills necessary to systematically design and evaluate programs. Philosophy and nature of systems, system analysis, program implementation and program evaluation. Prerequisites: 300, 302, 303, one section of 440, or consent of department.

462-3 Facilitation and Leisure Counseling Techniques. Study of concepts of leisure counseling as applied to special populations; leisure education models: facilitative techniques including gestalt awareness, transactional analysis, reality therapy, behavior modification, non-verbal communication, values clarification, assertive training, rational emotive therapy, and relaxation therapy. Prerequisite: 303, one section of 440.

465-3 Advanced Administrative Techniques. Designed to examine current administrative topics in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies, and others. Prerequisite: 365.

470-2 School and Community Recreation. The role of the public schools in community recreation. Emphasis on current practices and trends in curriculum content, adult education, extracurricular activities, after-school and vacation programs, and cooperative programs with other agencies. Prerequisite: 300, 302, 303 or consent of department.

475-1 to 24 (1 to 4 per topic) Recreation Workshop. Critical examination and analysis of innovative programs and practices in one of the following areas: **(a)** commercial, **(b)** student centers, **(c)** outdoor education, **(d)** outdoor recreation, **(e)** mentally retarded, **(f)** emotionally disturbed, **(g)** teen centers, **(h)** family, **(i)** aging, **(j)** prisons and detention centers, **(k)** physically handicapped, **(l)** budget and finance, and **(m)** playground leadership. **(n)** maintenance of areas and facilities. Critical examination and analysis of innovative programs and practices in the maintenance of grounds and facilities. Maximum of six hours to count toward master's degree.

485-2 to 12 Practicum in Outdoor Education. A supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching, and program leadership in outdoor, conservation, or environmental education setting. Costs for travel are the responsibility of the student. Prerequisite: consent of instructor.

490-12 Internship in Recreation. Supervised practicum experience in a professional

recreation setting. Emphasis on administrative, supervisory, teaching, and program leadership in the student's area of specialization. For undergraduate credit only. Must be taken during student's senior year. Prerequisite: 16 hours of recreation and consent of instructor. Mandatory Pass/Fail.
500-3 Principles of Recreation.
520-3 Park and Recreation Management.
524-3 Professional Skills in Therapeutic Recreation.
525-3 Recreation for Special Populations.
526-3 Professional Issues in Therapeutic Recreation.
530-3 Programs in Recreation.
550-3 Research in Recreation.
560-6 (2, 2, 2) Seminar in Recreation.
565-3 Seminar in Environmental and Outdoor Education.
570-3 Seminar in Recreation Management.
575-1 to 6 Individual Research.
580-1 to 6 Readings in Leisure and Recreation.
596-1 to 6 Field Work in Recreation.
599-1 to 3 Thesis.
601-1 to 12 per semester Continuing Research.

Rehabilitation (Institute, Major [Graduate Only], Courses)

Courses in this department may require the purchase of supplemental materials not to exceed $10 per course. Field trips are required for certain courses.

Courses

400-2 to 3 Introduction to Rehabilitation. An introduction to the broad field of rehabilitation, to include the processes (services), facilities and personnel involved. Note: students can enroll in the didactic portion for two credits, or three credits if they elect the field trips. No student can take the field trips alone without taking the didactic portion as well.
401-3 Rehabilitation for Non-Majors. An introduction to the process and practice of rehabilitation for students not majoring in this field. An overview of counseling, evaluation, physical restoration, adjustment services, job placement, and rehabilitation administration will be presented. Also a survey of client characteristics will be provided. Clients with sensory, physical, developmental, and psychiatric disabilities will be discussed. Career opportunities in rehabilitation will be examined.
402-1 to 3 Human Development and Behavior. Examines theories and systems of human development, personal behavior patterns and learning principles related conceptually to rehabilitation processes and practices. Prerequisite: consent of instructor.
403-3 Independent Living Rehabilitation. Survey of principles and methods of independent living for the handicapped with attention to client assessment for rehabilitation, effective techniques for specific handicapped groups, and the variety of types and organization of independent living programs.
406-3 Introduction to Behavior Analysis and Therapy. A survey of the principles and procedures in behavior analysis and therapy and the scope of its application to human needs and problems.
419-1 to 3 Cross-Cultural Rehabilitation. (Same as Black American Studies 490.) Major focus on the relationship/comparison of basic cultural, economic, and psychosocial processes relative to the rehabilitation of people in contemporary societies. Prerequisite: consent of instructor.
421-3 Vocational Development and Placement. Relates the psychosocial meaning of work, process of vocational development, theories of occupational choice and labor market trends to current and innovative methods of job development, selective placement, and follow-up with the handicapped. Prerequisite: consent of instructor.
425-1 to 6 Developing Employment Opportunities. Designed to train rehabilitation personnel in the attitudes, methods, and skills pertinent to placement of handicapped persons in competitive and other occupations. Prerequisite: special standing and consent of instructor.
431-3 Assessment Procedures in Rehabilitation. Review of fundamental bases of measurement, criteria for evaluating tests, practice with representative instruments in major categories, and the use of tests and work samples in assessing the handicapped's functioning abilities and work potential. Prerequisite: consent of instructor.
436-3 to 4 Vocational Evaluation and Adjustment Services. Introduction to the philosophies of evaluation and adjustment services in rehabilitation settings with emphasis on the rationale for use of psychometric testing, functional behavioral analysis, work sampling, situa-

tional assessment, and on the job evaluation in relation to the development of individualized adjustment service programs.

445-2 to 12 Rehabilitation Services with Special Populations. Procedures and programs pertinent to the care and treatment of special populations. Two semester credits will ordinarily be granted for each unit.

(a)-6 (2, 2, 2) Aging.
(b)-6 (2, 2, 2) Alcohol and Drug Abuse.
(c)-6 (2, 2, 2) Economically Deprived.
(d)-6 (2, 2, 2) Emotionally Disturbed.
(e)-6 (2, 2, 2) Genetically Disabled.
(f)-6 (2, 2, 2) Juvenile Offender.
(g)-6 (2, 2, 2) Mentally Retarded.
(h)-6 (2, 2, 2) Physically Handicapped.
(i)-6 (2, 2, 2) Public Offender.
(j)-6 (2, 2, 2) Sensory Disabled.
(k)-6 (2, 2, 2) Developmentally Impaired. Prerequisite: consent of instructor.

446-2 Psychosocial Aspects of Aging. Selected theories of psychosocial aspects of aging will be presented and the psychological and sociological processes of aging with the ensuing changes will be related to these conceptual frameworks. Included for discussion and related to field experience will be such concerns as stress reactions to retirement, physical disabilities, impact of reduced economic resources, and other personal-social changes in aging. Topics will address the knowledge base needed by students concerned with rehabilitation of aging clients in institutional, community and home settings. Therapeutic techniques to ameliorate these stresses will be an integral part of the course. Prerequisite: consent of instructor.

447-2 Biomedical Aspect of Aging. The aging process in a life-span developmental perspective; biological theories of aging, physiological changes in middle and old age and their effects on behavior, performance potential, and psychosocial functioning; senility and other age-related disabilities, their prevention and management; geriatric health maintenance and rehabilitation; institutionalization; death and dying. No prerequisites.

451-3 to 4 General Rehabilitation Counseling. A didactic and experiential analysis of the underlying premises and procedures of individual and group counseling in rehabilitation settings. Prerequisite: consent of instructor.

452-3 Behavior Change Applications. An overview of the development and evolution of applied behavior analysis. Applications of behavior analysis to problems of social significance in institutions, schools, and communities are surveyed. Prerequisite: 406 or consent of instructor.

453-1 to 4 Personal and Family Life Styling. The academic and personal competencies that are characteristic of fully-functioning, integrated persons within the context of our twentieth century environment will be systematically reviewed for adoption in every day living as well as in professional functions. Participants will focus on and experience life styling theories, models, and skills for their own growth and development and learn to assess basic risk-factors in their rehabilitation clients and families prior to helping them program a more balanced, synergistic, and holistic approach to living. Prerequisite: consent of instructor.

461-1 or 2 Introduction to Alcoholism. A survey of alcohol abuse and alcoholism, focusing on its development, consequences and rehabilitation; also addressed are population characteristics and other demographic information, as well as relevant legislative and administrative issues.

468-3 Sexuality and Disability. Research and rehabilitation practices pertaining to the unique psychosexual aspects of various chronically disabling conditions will be examined.

471-2 Rehabilitation of the Alcohol Abuser. A comparative survey of alcoholism rehabilitation programs focusing on the philosophy and treatment/rehabilitation models of each, as well as the role of the rehabilitation counselor in these settings. Prerequisite: 461 or consent of instructor.

479- 3 Technical Writing in Rehabilitation. Fundamentals of writing skills for rehabilitation specialists, including preparation and drafting of program/grant proposals, vocational evaluation/work adjustment reports, news releases and other publicity materials. Prerequisite: consent of instructor.

490-1 to 6 (1 to 3 per semester) Readings in Rehabilitation. Supervised readings in selected areas. Prerequisite: consent of instructor.

494-1 to 12 Work Experiences in Rehabilitation. Rehabilitation 494 and 594 both cannot be counted for a graduate degree, only one or the other can satisfy requirements toward a master's degree. Prerequisite: consent of department. Elective Pass/Fail.

501-2 Rehabilitation Foundations.
503-3 Basic Behavior Analysis.
508-3 Complex Behavior Analysis.
509-4 (2, 2) Behavior Analysis Research Designs.

512-3 Legal and Ethical Issues in Behavior Analysis.
513-1 to 4 Medical and Psycho-Social Aspects of Disability.
515-3 Behavioral Applications to Medical Problems.
523-3 Job Restructuring for the Handicapped.
525-3 Developing Job Readiness.
531-3 Individual Assessment Procedures in Rehabilitation.
533-3 Vocational Appraisal.
535-2 Behavioral Observation Methods.
543-3 Child Behavior.
545-3 Behavior Modification in Mental Retardation.
553-3 Learning Therapies for Special Populations.
554-3 Behavior Therapy.
557-2 to 6 Self Regulation of Behavior.
558-2 Rehabilitation with Special Alcoholic Populations.
560-3 Private Sector Rehabilitation.
561-3 Rehabilitation and the Courts.
562-3 Rehabilitation Facilities and Developmental Centers.
563-3 Behavior Analysis: Community Applications.
564-3 School Related Behavior.
565-3 Private Practice Rehabilitation.
566-2 Alcoholism and the Family.
568-3 Sexual Behavior and Rehabilitation.
570-3 Rehabilitation Administration.
572-1 to 3 Volunteer Administration and Programming.
573-2 to 3 Programming, Budgeting, and Community Resources.
574-3 Staff Training and Development.
575-2 Case Management and Reporting.
576-2 to 3 Development and Supervision of Rehabilitation Employees.
578-3 Program Evaluation in Rehabilitation.
579-3 Advanced Fiscal Management in Rehabilitation.
580-3 Professional and Community Relations in Rehabilitation.
581-4 (2, 2) Professional Issues in Rehabilitation.
582-1 to 4 Seminar in Rehabilitation Services.
583-1 to 4 Seminar in Work Evaluation.
584-1 to 6 (1 to 2 per semester) Seminar in Behavior Analysis and Therapy.
585-1 to 4 Seminar in Counseling/Coordination Services.
586-3 Seminar in Job Development and Placement.
587-3 Seminar in Correlates of Disability.
588-4 Seminar in Research in Rehabilitation.
589-1 to 18 (1 per semester) Professional Seminar in Rehabilitation.
591-1 to 18 Independent Projects in Rehabilitation.
592-1 to 16 Professional Supervision in Rehabilitation.
593-1 to 18 Research in Rehabilitation.
594-1 to 12 Practicum in Rehabilitation.
595-1 to 12 Internship in Rehabilitation.
596-4 Research Design and Methodology in Rehabilitation.
599-1 to 6 Thesis.
600-1 to 30 Dissertation.
601-1 to 12 per semester Continuing Research.

Religious Studies (Department, Major, Courses)

Religious studies examines religious attitudes and behaviors from their earliest beginnings through their dominant forms, east and west, to their modern developments and alternatives, pointing continually to the question, How is religion possible today? Study of this kind makes an interdisciplinary contribution to a liberal education in the humanities and social sciences and also provides a useful base for graduate study in religion, in the arts, or in any of the helping professions such as the ministry, medicine, psychiatry, law, social work, and public service.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements 45

Supplementary College Requirements (See Page 75) ..... (4) + 8-14
Requirements for Major in Religious Studies 28
Minimum hours from each of four areas as follows:
Area A: Religious Studies 231, 320a, b, 331, 332, 333, 334a, b, 336, 337, 410f, 441 ..... 9[1]
Area B: Religious Studies 201, 240, 301, 302, 341, 362, 441, Sociology 351 ..... 9[1]
Free electives from Areas A or B ..... 10[1]
Electives 33-39
Total 120

[1]Religious Studies 396 and 496 may be designed so as to apply toward fulfilling requirements of either Area A or Area B. By special permission of the department, students may earn up to six hours major credit with courses taken in other departments, such credit to apply to Area A or Area B, or the free elective group as the department shall determine.

Minor

Students may take a minor in religious studies by completing at least 13 hours of courses in the department, excluding GE-C 215 and Religious Studies 496.

Courses

201-3 Issues in Religion. Introduction to religion and its study, illustrated by cross-cultural examples.
231-3 Introduction to American Religion. An introduction to major cultural-historical patterns in American religious experience in the nineteenth and twentieth centuries. Elective Pass/Fail.
240-3 The Self and the Sacred. Cross-cultural and contemporary images of the self as they relate to self-understanding, the environment, society, and the cosmos. Elective Pass/Fail.
260-3 Religious Novels, Plays, and Films. How writers and artists either support or challenge conventional religious values through the media of literary works, theater, and film. Elective Pass/Fail.
301-3 Philosophy of Religion. (See Philosophy 301.) Elective Pass/Fail.
302-3 Religion, Reform, Revolution. Changing patterns in religion since the Second World War. Elective Pass/Fail.
320-6 (3, 3) Biblical Studies. A survey of Jewish and Christian biblical writings: how they came to be written, for what purposes, and with what effects. **(a)** The Old Testament. **(b)** The New Testament. Elective Pass/Fail.
331-3 Special Topics in American Religion. Selected themes, periods, or movements in American religion with an option for individual projects. Prerequisite: 231. Elective Pass/Fail.
332-3 Jewish Ideas and Culture. Selected Jewish rites, beliefs, and customs and their cultural roots and consequences. Elective Pass/Fail.
333-4 Myth and Ritual in Archaic Religion. (Same as Black American Studies 385.) The structure of the sacred among selected primitive peoples in Africa, Asia, and the Americas. Primitivism as a mode of being in contemporary culture. Elective Pass/Fail.
334-6 (3, 3) Religions and Cultures of Asia. **(a)** Religions of India — Hinduism, early Buddhism, Sikhism, Jainism, Indian Islam. **(b)** Religions of the Far East — China (Taoism, Confucianism, Buddhism) and Japan (Shinto, Zen). Elective Pass/Fail.
336-4 The Christian Heritage. A thematic and historical survey of European Christian thought using selected writers such as St. Paul, St. Augustine, Dante, C.S. Lewis, Dietrich Bonhoeffer. Elective Pass/Fail.
337-3 Islamic Religion and Culture. Religious and cultural developments in the Islamic world from Mohammed to current problems of modernization. Elective Pass/Fail.
341-4 Mysticism and Human Transformation. Comparative studies in selected "classical" mystics, and their meaning for contemporary world views. Elective Pass/Fail.
362-4 Art and the Religious Imagination. How religious insights have been transmitted, transformed, or rejected by works of literature, visual art, and music. Prerequisite: consent of instructor. Elective Pass/Fail.
396-1 to 6 (1 to 3 per topic). Comparative Studies in Religion. Special topics in religion, to be announced in advance. Both students and faculty may suggest ideas. May be repeated as the topic varies up to a maximum of 6 hours. Prerequisite: departmental approval. Elective Pass/Fail.
410F-3 Comparative Religion. (See Anthropology 410F.)
441-3 Themes in Greek Tragedies and the New Testament. (See Classics 441.)
496-1 to 6 Honors Readings in Religion. Topics selected by student and instructor which

ordinarily are not covered in depth in regular course offerings. Not available for graduate credit. Prerequisite: consent of department.

Respiratory Therapy Technology (Program, Major)

(SEE ALLIED HEALTH CAREERS SPECIALTIES)

Respiratory therapy is an allied health specialty concerned with the treatment, management, control, and care of patients with deficiencies and abnormalities associated with respiration. It involves the therapeutic use of medical gases and administering apparatus, environmental control systems, medications, ventilatory control and breathing exercises, cardiopulmonary resuscitation, and measures and maintenance on natural, artificial, and mechanical airways.

The respiratory therapy technology curriculum is designed to prepare students to become registered respiratory therapists. Completion of the course provides graduates with the educational requirements necessary to take the national registry examination administered by the National Board of Respiratory Therapy.

To be accepted into the respiratory therapy technology degree program the student must have completed the requirements for the allied health careers specialties program. These advanced respiratory therapy courses combine classroom and clinical education, which upon completion allows the graduate to become registry eligible and to receive an Associate in Applied Science degree in respiratory therapy technology.

The courses can be completed in one summer session and one regular semester. The summer session will involve a clinical rotation in health facilities that specialize in advanced respiratory therapy care procedures, while the regular semester will utilize both classroom and clinical education learning experience.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Major in Respiratory Therapy Technology

Completion of Allied Health Careers Specialties degree program	65
Respiratory Therapy Advanced Courses (Allied Health Careers Specialties designated)	23
Total	88

Courses

(SEE ALLIED HEALTH CAREERS SPECIALTIES)

Science (College, Courses)

Courses

257-2 to 8 Concurrent Work Experience Credit. Practical experience in a laboratory or other work directly related to course work in a College of Science program and to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit for ongoing work experience is sought by petition and must be approved by the dean and the executive officer of the student's major program before registration. Mandatory Pass/Fail.

258-2 to 8 Work Experience Credit. Practical experience in a laboratory or other work directly related to course work in a College of Science program and to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit for past work experience is sought by petition and must be approved by the dean and the executive officer of the student's major program. No grade for past work experience.

259-2 to 24 Vocational Education Credit. Formal, post-secondary, educational credit earned in a military service or other vocational, technical, or occupational program and directly

related to the student's educational objectives may be used as a basis for granting credit in the College of Science. Credit is given when specific program credit cannot be granted and is usable for elective credit only. Credit is sought by petition and must be approved by the dean and the executive officer of the student's major program.
500-2 Science Information Sources.
501-4 Research Transmission Electron Microscopy.
502-4 Research Scanning Electron Microscopy.

Secondary Education

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Secretarial and Office Specialties (Program, Specialized Major, Minor, Courses)

Current developments in office systems and related technology have resulted in many opportunities for information support personnel with special interests and extensive, specialized skills. Both men and women find rewarding careers in administrative support, information systems, and court reporting fields.

A student may earn credit by class attendance; transferring credits from an accredited post-secondary school, such as a community college; passing a proficiency examination; credit granted for work experience; or credit granted for work completed in other educational situations.

The student may prepare for a position in a field of special interest by working with an adviser to choose from a variety of allied health, administrative, technical, legal, and business courses to build upon the basic information support requirements in creating an individualized program of study. The student interested in legal information support would take additional courses in legal document production, legal administrative support procedures, and applied law. The administrative assistant student would take courses in administrative document production, administrative support procedures, and office management and supervision. One who wishes to become a medical administative assistant would develop a program including courses in physiology, health insurance processing, and medical administative support procedures. The word processing student would take courses in introductory word processing, introductory data processing, word processing applications I and II, and word processing operations and control. They will have hands-on training on several different types of equipment. It is possible to design programs without shorthand. All students will receive on-the-job experience related to their areas of emphasis.

Students entering court reporting must be able to type 30 words per minute. In addition, good language skills are recommended. Court and conference reporting may be pursued within the associate degree program, or as a post-associate offering for those who have completed an associate degree in a related field at a community college or other post-secondary institution. Students combine classroom instruction with actual courtroom experience in the company of an official reporter in preparation for state and national shorthand reporters examinations.

Moreover, a student may develop an individualized program of study other than those described above in the following manner:

1. The student should consult the program coordinator about a possible change.
2. Students should draft a program which is coherent and unified, showing courses they plan to take, and explaining the purpose of the program. It must meet the general requirements for associate degree programs.
3. The completed program must have the support of at least one faculty member and the coordinator.

Students who have an excellent background in office skills are eligible for a program of advanced curriculum entry (PACE) which allows students to complete an associate degree in one summer and one year.

The purchase of cassette tapes and supply packets or a charge is mandatory for students enrolled in learning center courses. A list of the requirements for all learning center courses will be sent upon request. Over a two-year period this would amount to $20 to $60 per student. Students enrolled in court reporting are required to purchase a shorthand machine at the end of their first year. Machines are available for rental during the first year of the program.

An advisory committee composed of business and court reporting personnel serves the program.

Associate in Applied Science Degree, School of Technical Careers

Requirements for Specialized Major in Secretarial and Office Specialties

GE-D 101	3
GE-D 118	2
GE-D 152	3
School of Technical Careers 120	3
Vocational Education Studies 302	3
Secretarial and Office Specialities 101a,b,c,d, 104	13.5
Other requirements dependent upon specialty program, Including cooperative experience or practicum	37.5-47
Total	65-74.5

Minor in Secretarial and Office Specialities (for students with a major in Spanish)

The minor in secretarial and office specialties is intended for students who wish to train as bilingual secretaries with a major in Spanish. For those skilled in the secretarial areas of shorthand, typing, and transcription the minor requirements are Secretarial and Office Specialties 106, 107, 109, 201, 205, 208, 232, 233, and School of Technical Careers 101 and 3-7 hours of approved electives in secretarial and office specialties courses. For those unskilled in the secretarial areas of shorthand, typing, and transcription the minor requirements include the courses above and Secretarial and Office Specialties 101a, b, c, d, 102a, b, c, d, and 104.

Courses

100-2 Typewriting. Designed to develop a proficiency in typewriting for students not pursuing a secretarial-related career. The main objective of the course is to develop stroking technique while emphasizing speed and accuracy. In addition to the typewriting skill, manuscript styles with footnotes, personal and business letter styles, and machine manipulation will be included. Lecture two hours. Learning Center two hours.

101-10 (3, 2, 2.5, 2.5) Keyboarding. Upon successful completion of these courses, the student will **(a)** basic level: develop touch typing techniques, operate machine parts, determine layout of material, machine adjustments, and type basic communications necessary for personal and career purposes, and use correction and carbon copy techniques; **(b)** intermediate level: set up and type various communication documents; **(c)** advanced level: set up and type advanced communication documents; **(d)** pre-specialty level: set up and type special communication documents and develop skill on various electronic and proportional spacing keyboards. Keyboarding speed and accuracy will be emphasized at all levels. Audio-visual-tutorial instruction is utilized at all levels. Lecture two hours. Learning Center three hours per level. Levels must be taken in sequence. Prerequisite: for b, 101a or equivalent; for c, 101b or equivalent; for d, 101c or equivalent.

102-10 (3, 2, 2.5, 2.5) Shorthand. Upon successful completion of the course modules, the student will **(a)** Gregg shorthand theory: demonstrate proficiency in Gregg shorthand theory by reading and writing outlines accurately and rapidly and by taking practice dictation on familiar and related material; **(b)** basic shorthand dictation and transcription: demonstrate shorthand skill by taking dictation at faster speeds and by transcribing dictated material accurately and rapidly; **(c)** intermediate shorthand dictation and transcription: attain higher speed and accuracy in shorthand with emphasis on mailability; **(d)** advanced

shorthand dictation and transcription: continue to attain higher speed and accuracy with emphasis on mailability and office-style material. Any shorthand system may be used in modules b, c, and d. Lecture/Learning Center four hours. Modules must be taken in sequence. Prerequisite: 101a for 102a; 101b for 102b; 101c for 102c; and 101d for 102d.

104-3.5 Machine Transcription (Introduction). Upon successful completion of this course, the student will properly operate and care for a transcribing unit and develop transcription speed by typing basic business communications from recordings; develop transcription techniques such as typing, grammar, punctuation, sentence structure, form and arrangement, as well as develop a higher transcription speed. The student will be required to make decisions in a variety of assignments. Lecture one hour. Laboratory three hours.

106-1 Reprographics. Upon successful completion of this course, students, given a particular reproduction job, will determine the most appropriate reproduction process by considering pertinent factors. They will then perform the necessary operations to reproduce the copies by using the duplicator, mimeograph, offset, and a variety of copiers. Lecture/laboratory two hours.

107-2 Filing and Records Management. Upon successful completion of this course, the student will apply filing rules to alphabetic, subject, numeric, and geographic methods; determine supplies for various filing systems; and perform filing techniques and demonstrate an understanding of concepts necessary for the establishment, maintenance, revision of a filing system, including micrographics. Lecture two hours.

109-3 Calculating Numerical Information. Upon successful completion of this course, the student will demonstrate skill in calculating numerical information with and without the use of machines such as the ten-key calculator, electronic calculators, and use of computer services, and perform necessary operations required in working with decimals, fractions, percentages, basic statistics, metrics, and graphic displays of numerical information. Lecture/Learning Center four hours.

140-3 Word Processing Concepts. Upon successful completion of this course, the student will be able to discuss current office technological trends, list and explain the document processing cycle, identify the elements of a word processing center, and demonstrate a basic knowledge of word processing terminology. The course is designed to introduce the student to word processing concepts and is not a hands-on application course. Lecture three hours.

180-1 Introduction to Court Reporting. Upon successful completion of this course, the student will know the types of reporters and their duties, be aware of job availability and career opportunities, understand the court reporters code of ethics, know the role of the reporter in the courtroom, and be familiar with state and national professional associations. Lecture one hour. Prerequisite: 101a.

182-3 Legal Terminology and Documents. Upon successful completion of this course, the student will be able to recognize, define, spell, and use legal terminology, including Latin words and phrases. The student will also be able to understand and type legal correspondence, client and court documents, and use a variety of reference books and guides. Lecture three hours. Prerequisite: 101b or concurrent enrollment in 101b.

183-7.5 (2.5, 2.5, 2.5) Machine Shorthand I, II, and III. Upon successful completion of these courses, the student will (a) be able to write with the machine by touch words by sound according to the computer-compatible shorthand theory; write shorthand abbreviations, derivatives, brief forms, and punctuation symbols; read printed text notes and student-made machine notes; take dictation of new material for five minutes at 60 to 80 words per minute with a 95 percent accurate transcript; (b) demonstrate machine shorthand skill by taking dictation of new material for five minutes at 80 to 100 words per minute, reading dictated notes, and writing an expanded vocabulary using correct theory, and accurate transcription of notes; (c) demonstrate machine shorthand skill be taking dictation of new material for five minutes at 100 to 120 words per minute, and rapid and accurate transcription of notes. Lecture five hours; Learning Center five hours. Prerequisite: must be taken in sequence; 101b, c, d or concurrent enrollment.

184-3.5 Pretranscription for Court Reporting. Upon successful completion of this course, the student will properly operate a transcription/dictation unit. Emphasis will be placed on the legal/medical aspect of vocabulary, spelling, capitalizing, numbers, word division, punctuation, grammar, and proofreading for court reporters. The student will dictate court proceedings and other communications from shorthand notes and will produce transcripts with speed and accuracy. Prerequisite: concurrent enrollment in 101c and 183c.

185-2.5 Introduction to Legal Testimony. Upon successful completion of this course, students should be able to take jury charge, congressional record and literary materials at speeds of 110-130 words a minute. Students will be familiar with two-voice dictation and will be able to produce typewritten transcripts. Lecture/laboratory five hours, plus Learning Center hours to be arranged. Prerequisite: 103c.

201-2 to 8 Cooperative Secretarial Experience. Upon successful completion of this course, the student will apply knowledges and skills learned in classroom situations to on-the-job situations in an office closely related to the student's specialty; apply knowledges and

skills learned in classroom situations to courtroom situations. Minimum of one hour conference and twenty hours work experience per week.

205-2 Office Management and Supervision. Upon successful completion of this course students will demonstrate competency in the planning, organizing, and controlling of a business office. They will identify proper managerial skills, managerial roles, office services, physical facilities, and records management. Lecture two hours.

207-2 Personality Development. Upon successful completion of this course, the student will be able to demonstrate knowledges learned concerning personal hygiene, personality, poise and charm, clothing, and personal ethics. Lecture 2 hours.

208-3 Applied Law for Technical Careers. An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the School of Technical Careers with the fundamental legal practices and procedures common to their area of specialization. The student will identify, define, and describe contracts, agency and employment, commercial paper, security devices, and insurance procedures related to the student's technical field. Lecture 3 hours.

209-3 Applied Law for Technical Careers II. An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the School of Technical Careers with the fundamental legal practices and procedures common to their area of specialization. Students will identify, define, and describe security devices and insurance, partnership, corporations, real property and environment, personal property and bailments, and commercial paper. Prerequisite: 208 recommended.

211-3 Health Insurance Processing. Upon successful completion of this course, students will have an understanding of various common health insurance forms and the procedures involved in processing them in a medical office. Efficient processing will be stressed at the end of the course. Lecture one hour, laboratory three hours. Prerequisite: 101b.

212-6 (3, 3) Medical Terminology, Dictation, Transcription. Upon successful completion of this course, the student will **(a)** demonstrate the use of medical terminology, including prefixes and suffixes; spell and define medical terms and other special terminology used in medical communications/documents; **(b)** increase speed and accuracy in the use of medical terminology, including special terms, short cuts, and abbreviations in the production of medical communications/documents from shorthand notes or recorded dictation. Lecture/Learning Center four hours. Prerequisite: 101c, 104 or 102c.

213-3 Medical Administrative Support Procedures. Upon successful completion of this course, the student will be able to perform necessary duties required of information support personnel in a hospital, clinic, doctor's office or other health-related organization. Lecture two hours, laboratory two hours.

220-4 Legal Document Production. Upon successful completion of this course, the student will be able to produce a variety of legal documents, papers, and office communications typing from handwritten copy, prepared forms, or using transcription equipment. Emphasis will be on decision making and use of modern word processing equipment and procedures. Lecture two hours, laboratory four hours. Prerequisite: 101d and 104. Concurrent enrollment in 222a recommended.

222-6 (3, 3) Legal Terminology, Dictation, Transcription. Upon successful completion of this course, the student should **(a)** know the spelling, punctuation, meaning and applicable shorthand outlines and be able to take dictation if applicable and transcribe from notes or recorded dictation rapidly and accurately; **(b)** know specialized terminology related to the legal field, be able to take dictation if applicable and transcribe at faster speeds with accuracy, and be able to handle office-style situations effectively. Lecture/Learning Center five hours. Must be taken in sequence. Prerequisite: 101c, 102d, or 104. Must be able to take shorthand at 100 words per minute.

223-3 Legal Administrative Support Procedures. Upon successful completion of this course, the student will perform necessary duties required of information support personnel in a law office or other law related organization. Lecture two hours, laboratory two hours. Prerequisite: 101d, 222a, and 220 or concurrent enrollment.

230-4 Administrative Document Production. Upon successful completion of this course, the student will produce various communications using electronic keyboards, dictation/transcription equipment, and various modern procedures with speed and accuracy. Lecture two hours, laboratory three hours. Learning Center hours to be arranged. Prerequisite: 101d, and 104.

232-3 Administrative Dictation and Transcription. Upon successful completion of this course the student will take administrative dictation at speeds of 100 to 120 words a minute, transcribe administrative/specialty communications with emphasis on mailability, and build transcription speeds ranging from 20 to 30 words per minute. Lecture/Learning Center four hours. Prerequisite: 101d and 102d, or ability to take shorthand at 100 words per minute.

233-3 Administrative Support Procedures. Upon successful completion of this course, students will be able to perform efficiently administrative support duties including handling mail, telephone situations, composing communications, arranging for travel and conferences,

performing basic information processing operations, and carrying out supervisory responsibilities. Emphasis will be on human relations, time management, and organization and planning of work. Lecture three hours. Prerequisite: 101c.

240-3 Word Processing Applications I. Upon successful completion of this course, the student will be able to operate basic text editing equipment, format text, store and retrieve text, correct and revise documents, perform selected automatic functions, and produce a printed document. This is the first hands-on application course. Lecture two hours. Laboratory two hours. Prerequisite: 101c, 104

241-3 Word Processing Applications II. Upon successful completion of this course, students will be able to set up, enter, and produce mass mailings with form letters; produce tables and other tabular text using word processing devices; construct and rearrange large documents using word processing equipment; and use advanced text editing techniques. Lecture two hours. Laboratory two hours. Prerequisite: 240.

242-3 Word Processing Operations and Control. Upon successful completion of this course, the student will be able to discuss the role of the word processing supervisor, describe the steps involved in conducting a word processing study, explain the procedures for analyzing and implementing a word processing system, and identifying how word processing ties in to larger systems. The course will prepare students to become supervisors of word processing operations and provide them with a knowledge of the responsibilities of a manager of word processing operations. Lecture three hours. Prerequisite: 241.

243-3 Insurance Office Procedures. Upon successful completion of this course, the student will perform office duties peculiar to an insurance office as well as procedures used in all types of offices. Lecture three hours.

244-1 Machine Transcription (Insurance). Upon successful completion of this course, the student will be able to transcribe from a transcribing unit most all types of insurance office communications at a rate of speed commensurate to the student's straight copy speed. Students will be required to make decisions in a variety of instances. Lecture/laboratory two hours.

260-3 Introduction to Text Processing. (Same as Electronic Data Processing 260.) Each student will learn the basic operation and function of representative word processing machines and terminals. The lab time will be spent in the development of speed and accuracy in the typing of textual materials. Lecture two hours. Laboratory two hours. Prerequisite: typing skill.

285-3 Legal Testimony I. Upon successful completion of this course, students will be able to take jury charge, legal opinion, and testimony materials at 130 to 180 words per minute. Reporting shortcuts and phrases are emphasized. Oral readbacks are stressed. Lecture/laboratory five hours. Learning Center hours to be scheduled. Prerequisite: 185 and ability to take shorthand at 130 words per minute.

286-3 Literary/Medical I. Upon successful completion of this course, students should be able to take literary material at speeds of 130 to 180 words per minute. Students should know medical terminology including prefixes, suffixes, and roots of medical words commonly found in depositions and court transcripts. Lecture/laboratory five hours. Learning Center hours to be scheduled. Prerequisite: 185, Allied Health Careers Specialties 141, and ability to take shorthand at 130 words per minute.

287-3 Legal Testimony II. Upon successful completion of this course, students should be able to take jury charge, legal opinion, and testimony materials at speeds of 160 to 210 words per minute. Three- and four-voice dictation is introduced and type transcripts are produced. Lecture/laboratory five hours. Learning Center hours to be scheduled. Prerequisite: 285, 286, and ability to take shorthand at 160 words per minute.

288-3 Literary/Medical II. Upon completion of this course, students should be able to take literary materials at speeds of 160 to 210 words per minute. Medical terminology will be studied. Lecture/laboratory five hours. Learning Center hours to be scheduled. Prerequisite: 286 and ability to take shorthand at 140 words per minute.

313-5 Advanced Machine Shorthand. Upon completion of this course, the student should have developed a take speed of 160 words a minute with an accuracy tolerance of five percent on literary material; reviewed computer compatible abbreviations and reporting phrases; increased transcription speed from 40 to 50 words a minute; reviewed rules of punctuation; reviewed legal and medical voacubulary; developed a technical vocabulary; and been introduced to the ethics and responsibilities of the reporting profession. Lecture three hours. Laboratory three hours. Prerequisite: 287, 288, and ability to take shorthand at 200 words per minute.

316-1 Legal Ethics. Upon completion of this course, the student should understand the canons of professional ethics as listed in *Cochran's Law Lexicon* and the NSRA Code of Ethics; have observed the etiquette and duties of court reporters by attending court sessons; have taken testimony in court and transcribed that copy in proper, final form; have taken jury charges and legal dictation in class at speeds of 100 to 180 words a minute and transcribed that copy with a minimum of 95 percent accuracy; have taken depositions and transcribed them in state-approved form. Lecture/laboratory two hours.

385-3 Legal Testimony III. Upon successful completion of this course, students should be able to take jury charge and legal opinion materials at speeds of 190 to 220 words per minute and testimony materials at speeds of 190 to 240 words per minute. Three- and four-voice dictation will be further developed and typed transcription of multiple voice material will be required. Lecture/laboratory five hours. Learning Center hours to be arranged. Prerequisite: 287 and ability to take shorthand at 200 words per minute.
386-3 Literary/Medical III. Upon successful completion of this course, students should be able to take literary materials at up to 210 words per minute. Medical terminology is reviewed and further developed. Typewritten transcription is stressed. Lecture/laboratory five hours. Learning Center hours to be scheduled. Prerequisite: 288 and ability to take shorthand at 160 words per minute.
387-3 to 12 Court Reporting Practicum. Upon successful completion of this course, students should have spent a minimum of 48 hours in assigned general reporting offices and official reporting locations as observers and in on-the-job training under the guidance of experienced reporters. Lecture one hour. Prerequisites: 200 words a minute.

Social Studies (Major)

(SEE CURRICULUM, INSTRUCTION, AND MEDIA)

Social Work (School, Major, Courses)

The social work program offers a professional social work curriculum designed to prepare students for beginning social work practice. The program focuses on direct services and leads to a Bachelor of Science degree with a major in social work.

The curriculum provides an interdisciplinary approach (grounded in the liberal arts) to understanding the relationship of people with their social and community environments. Through examination of the social welfare system, students are helped to identify those factors which limit social functioning and individual growth. The social work profession is committed to maximizing opportunities for minority and disadvantaged populations and this commitment is reflected throughout the social work program.

The social work practice courses provide basic social work skills for prevention and treatment of a variety of human problems. Course content intergrates human behavior with the social environment and focuses on ethnic and minority issues, service delivery issues in rural areas, and the effects of discrimination and poverty on populations-at-risk. Experiential learning (simulations, role playing, volunteer experience) is an integral part of the curriculum.

A unique aspect of the social work program is an intensive field practicum. The practicum provides an opportunity to integrate theoretical knowledge and helping skills learned in the classroom with the "real world" settings of southern Illinois social service agencies. A concurrent weekly seminar supports this integration of theory and practice.

The field practicum may be taken over two semesters of the senior year, half-time, or in one semester for a full 40 hour week. Block field placements do not begin during the summer. Approved practicum sites include children, youth, and family service agencies, county and state mental health agencies, gerontological service programs, medical facilities, and community planning and development agencies.

The undergraduate social work program is accredited by the Council on Social Work Education, the national accrediting agency. The degree may be recognized for advanced standing by graduate schools of social work offering advanced standing programs.

For requirements for the graduate degree in social work, see the graduate catalog.

Academic Requirements. Students must be in good standing in order to be considered for acceptance into the program.

Advisement. A student planning to major in social work should consult with the social work academic adviser of the College of Human Resources or a social work faculty member as early as possible in order to plan an orderly and coherent program. Faculty members are available for advice and career guidance information.

Bachelor of Science Degree, College of Human Resources

General Education Requirements	45
Must include GE-B 108 and 202	
Requirements for Major in Social Welfare	52
Foundations of Social Work: Social Work 375, 400a, 400b, 411, 421	15
Social Work Practice: Social Work 383, 401, 402, 403, 441, 442, 443, 444	29
Social Work Policy, Practice, and Issues: A total of 3 hours selected from Social Work 450, 461, 463, 466 or other social work electives	3
Social Work or Black American Studies 391	2
At least one 300 or 400-level course selected from: anthropology, economics, history, political science, psychology, sociology	3
Electives	23
Total	120

Courses

289-3 Field Service Seminar. (Same as Community Development 289.) This seminar is to be taken concurrently with 295 or Community Development 295. Prerequisite: consent of instructor.

295-1 to 6 Field Service Practicum in Southern Illinois. (Same as Community Development 295.) This course is designed for freshmen and sophomores who are volunteering service to community, social service, or health agencies in southern Illinois. Credit based upon time spent in direct service. Approval of agency required for registration. Mandatory Pass/Fail.

375-3 Social Welfare as a Social Institution. Explores the interdependence of social, cultural, political, and economic factors in the history, theory, and practice of social welfare, with special reference to development of the social work profession in response to welfare problems. This class may required field activity.

383-4 Interviewing and Interpersonal Helping Skills. This is an introductory course in interpersonal skills in the social services. Interviewing, history taking, and goal setting are emphasized.

391-2 Social Services and Minority Groups. (Same as Black American Studies 391.) Exploration of the needs, experiences, and attitudes of minority groups pertaining to social welfare services. Implications for policy and programs in such areas of service as physical and mental health, child welfare, family planning, income maintenance, recreation, education, training and employment.

396-1 to 3 Readings in Social Work. Varying topics not ordinarily covered in depth in regular courses and of specific interest to advanced students. Prerequisite: consent of instructor.

400A-3 Human Behavior and the Social Environment. A social systems approach to the study of typical human development and behavior. Examination of environmental forces impinging on the individual and implications for social work practice. Not for graduate credit for social work majors.

400B-3 Human Behavior and the Social Environment. A continuation of 400a. A social systems approach to the study of diverse/dysfunctional human development and behavior. Not for graduate credit for social work majors. Prerequisite: 400a.

401-4 Social Work Practice: Individuals and Families. An examination of problem solving interventions and environmental modifications skills for use with individuals and families. Prerequisite: 375, 383, 400a, and 400b or concurrent enrollment.

402-3 Social Work Practice: Small Groups. Examines social work group process with clinical and non-clinical groups. Leadership, roles, goal setting, and interventive strategies are addressed. Not for graduate credit. Prerequisite: 375, 383, 400a, 401, and 400b or concurrent enrollment.

403-3 Social Work Practice: Community Organization. An examination of basic approaches to community organization used by change agents and human service workers. Special emphasis is placed on sensitizing students to consumer participation issues. Prerequisite: 375, 383, 400a, 400b, 401, 402.

411-3 Methods of Social Research. Examines the principles, concepts and methods of scientific investigation in terms of its application to social work research and practice. Not for graduate credit. Prerequisite: concurrent enrollment in either 401, 402, or 403.
421-3 Social Welfare Policy. This course provides an in depth examination of social welfare structure, functions, policy, and programs, as well as strategies for shaping and changing policy. Prerequisite: 375.
441-6 Social Work in Selected Agencies. At least 20 hours per week of supervised experience in an approved social work agency with concurrent weekly seminar. Not for graduate credit. Field work practicums begin only in fall and spring semester. Prerequisite: senior standing, 375, 383, 391, 400a, 400b, 401, 402, 411; and a 2.5 grade point average in departmental prerequisites: Must be taken concurrently with 443. Mandatory Pass/Fail.
442-6 Advanced Field Practicum. Supervised field work experience in an approved social service agency with concurrent weekly seminar. At least 20 hours per week. Not for graduate credit. Field work practicums begin only in fall and spring semester. Prerequisite: senior standing, 375, 383, 391, 400a, 400b, 401, 402, 403, 411, 421, and 441, 443 if not taken concurrently in a block placement and a 2.5 grade point average in departmental prerequisites. Must be taken concurrently with 444. Mandatory Pass/Fail.
443-1.5 Field Practicum Seminar. The seminar assists the student who is in the field work to systematically conceptualize and integrate the field experience with the generic social work practice model and micro and macro social welfare theory. The seminar builds on and reemphasizes content provided in previous social work courses. Seminar discussion focuses on shared field work experiences: practice issues related to social work principles, ethics and professionalism; and intervention strategies. Not for graduate credit. Must be taken concurrently with 441.
444-1.5 Advanced Field Practicum Seminar. The seminar assists the students who is in field work to systematically conceptualize and integrate the field experience with the generic social work practice model and micro and macro social welfare theory. The seminar builds on and reemphasizes content provided in previous social work courses. Seminar discussion focuses on shared field work experiences: practice issues related to social work principles, ethics, and professionalism; and intervention strategies. Not for graduate credit. Must be taken concurrently with 442.
450-1 to 6 (1 per topic) Seminar in Special Issues for Social Work. (a) Practice. (b) Policy and planning. (c) Public welfare services. Topic will be selected from these three areas. Limited to no more than three credit hours per semester. May be repeated as topic varies up to six semester hours. Prerequisite: junior standing and consent of instructor.
461-3 Child and Family Services. Problems of child-parent relationships and difficulties in social functioning of children and adolescents. Adoptions, foster home and institutional placements, protective services. Not for graduate credit. Prerequisite: consent of instructor. Elective Pass/Fail
463-2 Social Work with the Aged. Basic concepts of social work methods applied to the older adult group. Characteristics of the aged group, its needs and potentials. Social trends and institutions involved in services to the aged. Prerequisite: consent of instructor.
466-3 Public Policies and Programs for the Aged. An introduction to public policy, program and planning for the aged. A framework is utilized for analyzing policy issues, programs and research in such areas as income maintenance, long term care, transportation, leisure time, housing and social services in order to aid present and future practitioners who work with the aged.
489-3 Field Service Seminar. (Same as Community Development 489.) This seminar is to be taken concurrently with 495 or Community Development 495. Prerequisite: consent of instructor.
495-1 to 6 Advanced Field Service Practicum in Southern Illinois. (Same as Community Development 495.) This course is directed at upperclassmen and graduate students volunteering service to community, social service, or health agencies in southern Illinois. Credit based on time spent in direct service. Approval of agency required for registration. Mandatory Pass/Fail.
496-1 to 6 Independent Research in Social Work. Provides opportunity for students to conduct independent research with the guidance of a faculty member. Topics of research are identified by the student and faculty member. Prerequisite: consent of instructor.
500-3 Human Behavior and the Social Environment I.
501-3 Human Behavior and the Social Environment II.
502-3 Social Work Processes: Group, Community and Organizational Analysis.
503-3 Foundations of Social Work Fields of Concentration.
504-2 Ethnic Diversity and Social Work Practice.
505-3 Foundations of Social Work and Services.
506-2 Social Welfare Policy Analysis and Design.
510-3 Social Work Practice I.
511-3 Social Work Research.
512-3 Research Design/Theory Building.
520-3 Social Work Practice II.

522-3 Professional Issues: Diversity, Ethics and Values.
530-2 Social Work Practice III.
531-2 Selected Topics in Advanced Social Work Practice I.
532-2 Evaluative Research Practicum.
533-2 Social Work Practice in the Schools.
535-2 Legal Aspects of Social Work Practice.
540-2 Social Work Practice IV.
541-4 Social Work Practicum I.
542-4 Social Work Practicum II.
543-7 Social Work Practicum III.
544-7 Social Work Practicum IV.
546-1 to 6 Selected Topics in Advanced Social Work Practice II.
550-2 Social Work Practice in Health and Mental Health Settings.
555-2 Impacts of Health/Mental Health Policy and Programs on Social Work Practice.
556-1 to 6 Selected Topics in Health/Mental Health Policy and Program Issues.
557-2 Community Mental Health and the Black Community.
558-2 Women and Community Mental Health.
559-2 Aging and Mental Health.
560-2 Social Work Practice with Children and Youth.
565A-2 Child Welfare Policy and Program Issues.
565B-2 School Social Work Policy and Program Issues.
566-1 to 6 Selectied Topics in Child Welfare Policy and Program Issues.
567-2 Seminar in School Social Work.
570-2 Gerontology and Social Work.
575-2 Policy and Program Issues of Aging.
576-1 to 6 Selected Topics in Aging Policy and Program Issues.
577-1 to 2 Selected Topics in Research Methodology.
578-2 International Social Work.
599-3 Thesis in Social Work.
601-1 to 12 per semester Continuing Research.

Sociology (Department, Major, Courses)

Sociology is the science of society. It explains how human groups, institutions, and social movements shape our lives. Sociology has always been a discipline which prepares students to think and act critically in the practical details of life. Sociology students, therefore, study such topics as sex roles, the city, juvenile delinquency, marriage and the family, criminology, social change, complex organizations, and political economy.

Training in sociology is basic both to creative living and to such practical tasks as the development and effective working of businesses, families, community service agencies, political movements and parties, churches, social clubs, government, industry, and schools.

Those with degrees in sociology find meaningful and rewarding employment as journalists, consultants, social change agents, advisers to government, politicians, clergy, educators, diplomats, and other occupations. Moreover, an undergraduate major in sociology is excellent preparation for those anticipating graduate school in law, computer science, social welfare, the ministry, community development, teaching, public administration, business administration, journalism, and many of the technological and scientific fields. In addition, many students have enjoyed the benefits of double majors or major-minor combinations between sociology and one of these related fields.

The Department of Sociology offers two alternative plans of study for completion of its major. General sociology is for those seeking a broad academic background in sociology and is usually chosen either by those who want a general liberal arts education in the social sciences or those anticipating graduate study in one of the social sciences. Applied sociology combines general studies in sociology with individually planned programs built around applied courses, in-

cluding field work experience. The applied sociology plan is primarily for those who seek careers in those governmental, business, or community service occupations for which graduate school training is either unnecessary or taken as an option somewhat later in one's career.

The major requires 8 hours for the sociology core requirements which are 301 and 312. Also required are four hours of senior year experience in 497 which will involve supervised study for those interested in general sociology or 498 which will involve supervised field experience for those interested in applied sociology. The remaining 20 hours required for the major must include at least eight hours at the 400 level and may be elected from regularly scheduled departmental courses. Transfer students must earn at least 20 hours of sociology credit at Southern Illinois University at Carbondale.

Students wishing to major or minor in sociology should consult with the director of undergraduate studies in sociology as early as possible to plan an orderly program that fulfills departmental requirements and the interests of the student. Thereafter, sociology majors should meet with their departmental adviser each semester to keep up-to-date their academic records and to receive advice and approval for sociology courses which they wish to take during their next term of study.

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements		45
Supplementary College Requirements (See Page 75)		(4) + 8-14
Requirements for Major in Sociology		32
Sociology Core Requirements	8	
Sociology 301 or equivalent	4	
Sociology 312	4	
Senior Year Work	4	
Sociology 497 or 498.		
Sociology Electives	20	
At least eight hours must be earned in 400-level courses.		
Electives		29-35
Total		120

Minor

A minor in sociology consists of a minimum of 16 hours of which four must be Sociology 301 or equivalent . Students completing a minor in sociology to meet part of the requirements for a teaching certificate in the State of Illinois must complete these requirements.

Honors Program

The department offers an honors program for academically outstanding sociology majors. Qualifications for acceptance into this program are: (1) an overall grade point average of at least 3.00; (2) completion of 8 hours in sociology courses with a grade point average of at least 3.25. Three honors courses are offered at the junior and senior class levels. For details, qualified students interested in this program should consult the director of undergraduate studies in the Department of Sociology.

Courses

101-2 The New Student in the University. Investigates the purposes of higher education, increases knowledge and utilization of the university and the learning process. Only for first semester students at this university. Special sections for junior college transfer students and others. Does not apply to hours in sociology major. Elective Pass/Fail.

223-3 Women and Men in Contemporary Society. (Same as Women's Studies 221.) Examines theories of women's and men's roles in society. Surveys contemporary gender inequalities in the U.S. and developing countries. Special attention given to employment, race, sexual assault, feminist movements, alternative family/lifestyles, and childrearing. Elective Pass/Fail.
301-4 Principles of Sociology. This course is intended to acquaint sociology majors and prospective majors with basic principles in a broad sampling of substantive areas of contemporary sociology as background for more advanced courses. Elective Pass/Fail.
302-4 Contemporary Social Problems. Review of the basic sociological perspectives used in the study of social problems; discussion and analyses of selected contemporary social problems; assessment of alternative courses of action for the solution of problems. Elective Pass/Fail.
308-4 Statistics for Social Science. Methods and application of statistics in the social sciences. Measures to describe distribution, measures of relationship, statistical inference. Elective Pass/Fail.
312-4 Elements of Sociological Research. The student is introduced to a variety of research methods in the social sciences including use of the library, techniques of observation, and elementary steps in quantitative measurements and anlaysis. Elective Pass/Fail.
316-3 Political Socialization. (See Political Science 316.) Elective Pass/Fail.
321-4 Society and the Individual. Examines the relative influence of individual characteristics, face-to-face interactions, and larger social structures in shaping human behavior. Emphasis is on socialization through the life cycle and in various sectors of society (family, schools, work settings.) Explores related topics of attitude formation and change, social influence, the self and self esteem, group processes, and social power. Elective Pass/Fail.
330-3 Sociology of Business and Industry. A sociological examination of the development of the modern corporation in its social, economic, and political environments. Consideration will be given to various theoretical approaches to the firm. Sociological analysis will be undertaken in selected areas such as labor management relations, women in the corporation, and the corporation and the community. Elective Pass/Fail.
332-4 Comparative Social Organization. Examination of social organization and institutions in pre-industrial and industrial societies. Elective Pass/Fail.
335-3 Urban Sociology. Development of cities and urban social life; present day ecology of cities: suburbs, ghettos, blight; strategies of urban renewal; urban life styles; violence and acute urban problems; urban housing needs; designing safer neighborhoods; urbanization in Europe and developing countries. Elective Pass/Fail.
340-4 Family. The family in historic and contemporary society; evolution of the modern family; changes in family functions, structure, roles; and an examination of variation and change in family systems. Elective Pass/Fail.
351-4 Sociology of Religion. The origin and function of religious ideas and institutions in society, their relationship to social change and stability. Elective Pass/Fail.
371-4 Population Problems. Characteristics and problems of population growth, composition, distribution, mortality, birth control and fertility, international and internal migration, and government policies. Elective Pass/Fail.
372-4 Criminology. The nature of crime; criminal statistics; causal factors and theories of criminality; types of criminals. Elective Pass/Fail.
385-4 Energy and Society. Development of human social organizations accompanied by increasing control of power, technology, and energy resources. Review of changes in social institutions, social processes, and energy use. Aspects of energy development, conservation and control. Elective Pass/Fail.
396-1 to 3 Readings in Sociology. Prerequisite: consent of department and instructor. Elective Pass/Fail.
396H-1 to 3 Honors Readings in Sociology. Topics selected jointly by student and instructor which ordinarily are not covered in depth in regular course offerings. Prerequisite: consent of department and instructor. Elective Pass/Fail.
397H-3 Honors Seminar in Sociology. Varying sociological topics studied in depth and breadth. Maximum opportunity for student participation in the exploration of the subject. Prerequisite: consent of department and instructor. Elective Pass/Fail.
406-4 Social Change. Theories and problems of social change; their application, with emphasis on the modern industrial period. Elective Pass/Fail.
412-4 American and Soviet Society. A sociological perspective on American and Soviet society. Combines a macroscopic analysis of major social institutions with microscopic examination of everyday life; shows how each social system molds personality and how socially acquired habits reinforce the social system. Designed to meet the needs of students interested in comparative and political sociology as well as those searching for an understanding of the problems of the two super powers. Prerequisite: none, 301 recommended. Elective Pass/Fail.
413-3 European Rural Society, 400-1100 A.D. (Same as History 413.) Monks, priests,

peasants, barons, and kings: an historical sociology of the ecclesiastical and feudal regimes which replaced classical civilization after the fall of the Roman Empire in the West. Elective Pass/Fail.

414-3 European Urban Society, 1000-1500 A.D. (Same as History 414.) Merchants, bankers, craftsmen, lawyers, and bureaucrats: a sociological and economic analysis of the origins and development of early European urban institutions. Elective Pass/Fail.

415-3 Logic of the Social Sciences. (See Philosophy 415.) Elective Pass/Fail.

423-4 Sociology of Gender. (Same as Women's Studies 442.) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro-level, in work and family roles, in social institutions, and at the global, cross-cultural level. Elective Pass/Fail.

424-4 Social Movements and Collective Behavior. A sociological analysis of the behavior of collectivities in uninstitutionalized settings; crowds, masses, publics and social movements will be examined with relation to their social and cultural backgrounds, forms of expression and organization, and their functions in society. Elective Pass/Fail.

426-4 Social Factors in Personality and Adjustment. Review of selected theoretical orientations and research traditions in social psychology. Comparison of different theoretical and methodological approaches — symbolic interaction, role theory, developmental and social psychology, theories of attitude organization and change, studies of belief and value systems, theories of socialization. Elective Pass/Fail.

435-4 Social Inequality. Discussion of theories and evidence pertaining to the sociostructural causes and consequences of inequality based on social class, prestige, power, gender, wealth, and income. Prerequisite: consent of instructor. Elective Pass/Fail.

437-4 Sociology of Development. Survey of sociological theories of development including modernization, dependency, and world-system perspectives. Problem areas of development are examined: economic growth, state structures, multinational corporations, labor force, education, migration, population and women's roles. Elective Pass/Fail.

450-4 Social Thought. Traces the historical development of sociology from its beginnings in the Enlightenment to the classical expositions of the early 20th Century. Elective Pass/Fail.

451-4 Sociology of Language and Signs. (Same as Speech Communication 446.) Introduction to sociological semiotics with reference to such figures as Eco. Foucault, Derrida, Baudrillard, Saussure, Habermas, the ethnomethodologists. Emphasis on the place of language and signs in sociological explanation.

454-4 Sociology of Science. Emphasis on the origins and growth of science in historical perspective, reciprocal relations between science and society in the 20th Century, science as a social system, differentiation within and relations between disciplines, and implications of the social organization of scientific research and funding. Elective Pass/Fail.

460-4 Sociology of Medicine. Examination of the sociological factors involved in health and illness, the role of medicine in society, the organization of medical care and health institutions in the United States, and the prospects for sociological research in this area. Elective Pass/Fail.

465-3 Sociology of Aging. The adult life cycle from a sociological perspective, with emphasis on the later stages of adulthood. Special topics on aging include demographic aspects, family interaction, ethnicity, and cross-cultural trends.

471-4 Introduction to Social Demography. Survey of concepts, theories, and techniques of population analysis; contemporary trends and patterns in composition, growth, fertility, mortality, and migration. Emphasis is on relationship between population and social, economic, and political factors. Elective Pass/Fail.

472-3 The American Correctional System. (See Administration of Justice 472.)

473-4 Juvenile Delinquency. (Same as Administration of Justice 473.) Nature of sociological theories of delinquency; analytical skills in studying the delinquent offenders; systematic assessment of efforts at prevention, control, and rehabilitation in light of theoretical perspectives. Prerequisite: none; 6 hours of social/behavioral science recommended. Elective Pass/Fail.

474-4 Sociology of Education. Methods, principles, and data of sociology applied to the educational situation; relation of education to other institutions and groups. Prerequisite: 301 or six hours of GE-B courses or consent of instructor. Elective Pass/Fail.

475-4 Political Sociology. (Same as Political Science 419.) An examination of the nature and function of power in social systems at both the macro-and micro-sociological levels of analysis, the social bases of power and politics; and various formal and informal power structures; the chief focus will be on American society. Elective Pass/Fail.

497-4 Senior Seminar. Contemporary issues in sociology and the analysis of these issues. Prerequisite: senior standing with 20 hours in sociology (including 301), or consent of instructor. Not for graduate credit. Elective Pass/Fail.

498-1 to 4 Independent Research. With a faculty member the student arranges a research topic resulting in a paper or report. Prerequisite: senior standing with 20 hours of sociology (including 301), and consent of instructor. Elective Pass/Fail.

498H-1 to 4 Honors Independent Research. Advanced research study of a problem. Not for graduate credit. Prerequisite: senior standing with 20 hours in sociology (including 301), and consent of department and honors standing. Elective Pass/Fail.
501-4 Survey of Sociological Theory.
502-4 Seminar on Theoretical Systems in Sociology.
506-4 Seminar on Contemporary Sociological Theory.
512-5 Sociological Research.
513-4 Methods of Historical Sociology.
519-4 Methodological Foundations of the Social Sciences.
521-4 Seminar in Social Psychology.
522-4 The Sociology of Small Groups.
526-8 (4, 4) Quantitative Methods of Sociology.
529-4 Sampling and Inference in Social Research.
530-2 to 12 (2 to 4 per topic) Topical Seminar in Sociology.
532-4 Urban Social Structure.
537-4 Sociology of Law.
539-4 Seminar in Complex Organization.
542-4 Seminar on the Family.
543-4 Seminar in Family Variability and Change.
551-4 Sociology of Religion.
562-4 Deviance and Disorganization.
564-4 Social Factors in Health and Illness.
566-4 Sociology of the Community.
572-4 Seminar in Criminology.
591-1 to 4 Individual Research — Supervised Research Projects.
596-1 to 8 Readings in Sociology.
599-1 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Special Major (Major)

The special major program allows qualified undergraduate students to design their own majors, if no existing major meets their academic needs and interests but existing University resources may be used to satisfy them. Guidelines for developing a special major curriculum are available in the office of the program administrator, the director of Undergraduate Academic Services. These require that the student:

1. obtain a faculty sponsor from a department with studies most like the major,
2. collaborate with the sponsor to propose a workable plan of study, structured coherently around a central topic, with a title that identifies the program's individualized purpose,
3. receive approval of the program proposal from the director of Undergraduate Academic Services,
4. complete at least 28 semester hours, mainly in upper level, 300 or 400, courses and clearly attributable to the special major, after final approval,
5. meet all graduation and course hour requirements of the University and of the college and department which agree to sponsor the special major. Final recommendation for a baccalaureate degree with a special major is the prerogative of the director of Undergraduate Academic Services, with approval of the appropriate college dean.

Special Education (Department, Major, Courses)

In the Department of Special Education, teachers are prepared to work with behaviorally disordered, mentally retarded, and learning disabled children. Students seeking the Standard Special Certificate will complete a 120 semester hour program leading to approval in one of the three handicap areas listed above.

Students who wish to obtain joint certification in special education and elementary education must complete a 144 to 149 hour program.

All programs are fully approved by the Illinois State Teacher Certification Board.

As with other teacher preparation programs within the University, departmental approval must be secured for each student after the student's first semester of membership in the department.

In the Department of Special Education this approval and subsequent approvals are based not only on continued satisfactory academic performance, but acceptable professional behaviors which the faculty deem essential for competent and effective educations of exceptional children and youth.

Bachelor of Science Degree, College of Education

SPECIAL EDUCATION MAJOR — STANDARD SPECIAL CERTIFICATE WITH APPROVAL IN BEHAVIORAL DISORDERS, OR MENTAL RETARDATION, OR LEARNING DISABILITIES[1]

General Education Requirements 46
- GE-A: 9 hours
- GE-B: 9 hours including 202 and 212 or 301
- GE-C: 12 hours including Music 101 (GE-C substitution) and one literature course
- GE-D: GE-D 101; 117 or 119; GE-D 152 or 153; Mathematics 114 or equivalent to substitute for GE-D 107
- GE-E: 4 hours including 201 and two hours of physical education activity.

Additional General Education Requirements for Certification 20
- Art 348; Music 302 or 300;
  Physical Education 202; Mathematics 314
- Psychology 301
- Educational Psychology 412 or Psychology 431
- Special Education 400

Requirements for Major in Special Education 49

Professional Education Requirements 26
- Education 201, 301, 302, 303, 304c, 312, 350, 400[1], 401[1]

Special Education Requirements 23
- Special Education 411, 423, 425 7
- Curriculum, Instruction, and Media 312, 315 6
- Certification Area 10

  The certification area requirement must include the specific courses listed and additional courses approved by the department to bring the total in the areas to at least 10 hours.
  - Behavioral Disorders: 401, 417, 430
  - Mentally Retarded
    - Educable Mentally Retarded: 402, 406, 418, 430
    - Trainable-Severely/Profoundly Handicapped: 402, 406, 421, 431
  - Learning Disabilities: 404, 419, 430

Electives 5
- Psychology 305, 307 (both required in behavioral disorders)
- Special Education 410; Curriculum, Instruction, and Media 407e; Communications and Fine Arts 497 (if the section is taught as Integrated Arts for the Handicapped)

Total 120

[1]To be certified in two areas of special education, a student must take problem and characteristics courses in both areas, methods courses in both areas and eight hours of student teaching in both areas.

SPECIAL EDUCATION MAJOR — JOINT CERTIFICATION IN SPECIAL EDUCATION AND ELEMENTARY EDUCATION SPECIALIZATION

General Education Requirements 45
GE-A: 9 hours
GE-B: 9 hours including 202 and 212 or 301
GE-C: 12 hours including Music 101 (GE-C substitution) and one literature course
GE-D: GE-D 101; 117 or 119; GE-D 152 or 153; Mathematics 114 or equivalent to substitute for GE-D 107
GE-E: 4 hours including 201 and two hours of physical education activity.

Additional General Education Requirements for Certification 20
Art 348
Music 300 or 301 or 302
Physical Education 202
Mathematics 314
Psychology 301
Educational Psychology 412 or Psychology 431
Special Education 400

Requirements for Major in Special Education 69
Professional Education Requirements 34
Education 201, 301, 302, 303, 304c, 312, 350, 400[1], 401[1]
Special Education Requirements 17
Special Education 411, 423, 425 7
Certification Area 10
The certification area requirement must include the specific courses listed and additional courses approved by the department to bring the total in the areas to at least 10 hours.
Behavioral Disorders: 401, 417, 430
Mentally Retarded
Educable Mentally Retarded: 402, 406, 418, 430
Trainable-Severely/Profoundly Handicapped: 402, 406, 421, 431
Learning Disabilities: 404, 419, 430
Elementary Education Requirements 18
Curriculum, Instruction, and Media 315, 312, 423, 424, 426, 435

Electives (must bring total in general education to 78) 13
Psychology 305, 307 (both required in behavioral disorders)
Special Education 410; Curriculum, Instruction, and Media 407e; Communications and Fine Arts 497 (if the section is taught as Integrated Arts for the Handicapped)

Total 148

[1] Includes eight hours of student teaching for special education and eight hours of student teaching for elementary education.

SPECIAL EDUCATION MAJOR — JOINT CERTIFICATION IN SPECIAL EDUCATION AND PHYSICAL EDUCATION

General Education Requirements 46
GE-A: 9 hours
GE-B: 10 hours including 108, 202 and 301
GE-C: 12 hours including Music 101 (GE-C substitution) and one literature course

GE-D: GE-D 101; 117 or 119; GE-D 152 or 153; Mathematics 114 or equivalent to substitute for GE-D 107
GE-E: 4 hours including 201 and two hours of physical education activity.

Requirements for Major in Special Education 56-57
Professional Education Requirements 31
Education 201, 301, 302, 303, 304c, 312, 350, 400[1], 401[1]
Special Education Requirements 25-26
Special Education 400, 411, 423, 425 10
Certification Area 9-10
The certification area requirement must include the specific courses approved by the department
Behavioral Disorders: 401, 417, 430
Learning Disabilities: 404, 419, 430
Mentally Retarded
Educable Mentally Retarded: 402, 406, 418, 430
Trainable-Severely/Profoundly Handicapped: 402, 406, 421, 431
Curriculum, Instruction, and Media 312, 315 6

Physical Education Requirements 36
Physical Education 115a, b, c; 116a, d, e, or f; 210; 303 305; 320; 324; 326; 212; 214; 215; 216; Physiology 300

Electives 6-9
Minimum of 6 hours unless student is emphasizing Behavioral Disorders in which case 9 hours of electives is required
Psychology 301, 305, 307, 431
Educational Psychology 412
Physical Education 301, 370
Sociology 473
Rehabilitation 406

Total 144-148

[1]Includes eight hours of student teaching for special education and eight hours of student teaching for physical education.

Courses

400-3 Introduction to Special Education. Physical, mental, emotional, and social traits of all types of exceptional children and youth. Effects of handicaps in learning situations. Methods of differentiation and techniques for rehabilitation. Case studies, observations, and field trips may be required.

401-3 Problems and Characteristics of the Behavior Disordered Children and Youth. Diagnosis, screening, classroom management, placement considerations, goals, and the effective use of ancillary services for the emotionally disturbed and/or socially maladjusted. Emphasis on the understanding of maladaptive behavior through principles of learning and behavior. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.

402-2 Problems and Characteristics of the Mentally Retarded Child. Emphasizes a developmental approach to understanding and dealing with children who have mildly and moderately reduced mental abilities. Considers historical, theoretical, and practical factors pertinent to mental retardation. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.

403-3 Problems and Characteristics of the Gifted Child. Designed to help teachers in the identification of and programming for gifted and talented children. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.

404-3 Problems and Characteristics of Learning Disabled Children and Youth. Behavioral, emotional, physical, and learning characteristics of children and youth, with learning disabilities. Emphasis on receptive and expressive modalities for learning; theories dealing with causes and management. Prerequisite: 400 or concurrent enrollment or consent of department chairperson.

405-3 Education of the Preschool Handicapped Child. Emphasizes classroom procedures for enhancing development in children with developmental delay. Covers organization of the curriculum, goal setting, task analysis, lesson planning, and classroom organization.

Practicum with preschool handicapped children is an integral part of this course. Prerequisite: 400, concurrent enrollment, or consent of chairperson.

406-3 Characteristics of Moderately and Severely Handicapped Learners. Presents historical, theoretical, and research developments in service delivery for severely handicapped individuals of all ages. Provides the basic developmental, instructional, and curricular background essential for prospective educators. Emphasizes a behavioral approach. Thirty hours of observation or equivalent applied experience is required.

407-3 Characteristics of Deaf and Hard of Hearing. Emphasizes the basic developmental, psychological, social adaptive, educational, and demographic characteristics of deaf and hearing impaired populations. Includes an historical summary of educational philosophies and techniques that have been developed to meet the unique instructional needs of the hearing impaired. This course includes lectures, observations, and clinical interactions with hearing impaired individuals. Prerequisite: 400 or consent of instructor.

408-3 Integrating Handicapped Children and Youth in Normalized Environments. For school personnel who serve directly and indirectly handicapped children and youth. The course focuses on providing the essential characteristic information and skills to appropriately educate the handicapped in a variety of settings.

409-1 to 6 Cross-Cultural Studies. Seminar and/or directed independent study concerned with socio-cultural variables affecting the personality characteristics and educational needs of children who are diagnosed as mentally, emotionally, or psychically handicapped. Prerequisite: 400 or consent of instructor and department chairperson.

410-2 International Aspects of Services for the Handicapped. Focus on innovative ideas and practices in other countries in preschool programs, special education, rehabilitation, vocational training and employment, recreation, community living, organizational structures, and legislation.

411-3 Assessment in Special Education. Designed to develop competency in students in the administration, scoring and interpretation of educational tests including the integration of findings from a number of tests. A laboratory fee is required to cover the cost of materials. No textbook is required. Prerequisite: 400; Curriculum, Instruction, and Media 312, 315; Education 304c. Prerequisite or concurrent enrollment in 401, or 402 or 404.

412-3 Assessment and Remedial Planning for the Preschool Handicapped Child. An introduction to the assessment of preschool handicapped children including the specifics of screening, tests used by the classroom teacher and observational precedures. A charge for testing materials is required. No textbook is required. Prerequisite: 400 and 405.

414-3 Assessment and Remedial Planning for Youth in Special Education. Testing, evaluation, and program development for adolescent students with special learning problems. Purchase of testing materials costing approximately $12 is required. Prerequisite: 400 and consent of department.

415-3 Integrated Arts for the Handicapped. (Same as Communications and Fine Arts 497B.) Designed for teachers and others serving the handicapped. Provides a foundation of information, competencies, and appreciation regarding the major art forms: creative movement, drama, music, and visual arts. Their value in the education and development of the handicapped is shown. Includes actual work with children. Prerequisite: consent of instructor.

417-3 Methods and Materials for Teaching Behaviorally Disordered Children and Youth. Psychoeducational procedures used in teaching the behaviorally disordered children and youth. Includes field trips, meetings with parents, and visits by resource persons from schools and agencies. Prerequisite: 411, concurrent enrollment in Education 312 and Education 400.

418-3 Teaching Educable Mentally Handicapped Children Elementary Level. Psychoeducational strategies used in teaching the educable mentally handicapped children and youth. Prerequisite: 411 or concurrent enrollment and concurrent enrollment in an approved field experience.

419-3 Methods and Materials for Teaching Learning Disabled Children and Youth. Psychoeducational strategies used in teaching children and youth with learning disabilities. Prerequisite: 411 or concurrent enrollment and concurrent enrollment in an approved field experience.

421-3 Methods and Materials for Teaching Moderately and Severely Handicapped Children. Emphasizes a behavioral approach (i.e., systematic instruction) in teaching young students wth severe handicaps (e.g., moderate MR, severe MR, profound MR, multiple handicapped, autistic). Systematic instruction is discussed in relation to applications across various curriculum domains. Each student must have access to working with moderately or severly handicapped students during the semester. All students are to develop and implement an instructional program during the course of the semester. Prerequisite: 411 or concurrent enrollment and concurrent enrollment in an approved field experience.

423-2 General Procedures in Special Education. Deals with methods, materials and instructional management practices common to the instruction of the handicapped. Prerequisite: 411; concurrent enrollment in Education 312.

425-2 Home-School Coordination in Special Education. Consideration of the techniques

used in parent interviews, conferences, and referrals by school personnel with parents of handicapped children. Prerequisite: 400 or consent of department chairperson.
427-3 Methods and Materials for Teaching Deaf and Hard of Hearing. Includes specific assessment techniques and modification for developing appropriate curriculum and instructional programming for hearing impaired students, including all areas of skill development; reading, language, mathematics, motor, social adaptive. The students will be required to demonstrate both assessment adaptations and teaching strategies at field sites. Each participant must develop and conduct an instructional program with prelingually severely hearing impaired children or youth. Prerequisite: 407.
430-3 Work-Study Programs for Handicapped Adolescents to Age 21. Deals with modifications of and additions to school programs to insure that they are appropriate to the needs of the mildly handicapped adolescent. Includes detailed coverage of joint workstudy programs, as preparation for vocational adequacy. Prerequisite: 400 and one of 401, 402, 403, or 404.
431-2 Work-Study Programs for Severely Handicapped Adolescents to Age 21. Deals with program offerings in public school special education programs designed to prepare the severely handicapped adolescent for maximum vocational adequacy. Prerequisite: 400 and one of 401, 402, 404, or 406; and approved field experience.
456-4 (2,2) Music for Exceptional Children. (See Music 456.)
490-1 to 4 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to selected seniors. Not for graduate credit. Prerequisite: 400 and consent of department chairperson. Elective Pass/Fail.
500-3 Special Education Research Problems.
503-3 Educational Program Delivery for Gifted and Talented Students.
505-3 The Pre-School Handicapped Child.
511A-3 Advanced Assessment and Remedial Planning in Special Education.
511B-3 Advanced Remediation in Special Education.
512-3 Advanced Assessment and Remedial Planning for the Preschool Handicapped Child.
513-3 Organization, Administration, and Supervision in Special Education.
514-3 Simulation of Administrative Tasks in Special Education.
515-2 Itinerant and Resource Teaching in Special Education.
516-3 Advanced Assessment for Educationally Handicapped Youth in Special Education.
517-2 The Atypical Child and Social Agencies.
518-1 to 6 Workshop in Special Education.
519-3 Career Development Opportunities for Educationally Handicapped Youth.
523-3 Technology Usage in Special Education.
550-3 Behavior Management of Exceptional Children and Youth.
560-2 Inservice Delivery.
576-3 Correctional Education Programming.
578-3 Legal Framework for Special Education Services.
580-3 Master's Seminar: Issues and Trends in Special Education.
582-2 Post-Master's Seminar: Remedial Models in Special Education.
583-2 Post-Master's Seminar: Program Coordination in Special Education.
584-2 Doctoral Seminar: Research in Special Education.
585-2 Doctoral Seminar: Evaluation in Special Education.
586-1 to 4 (1, 1, 1, 1) Proseminar in Special Education.
590-1 to 5 Readings in Special Education.
591-2 to 5 Independent Investigation.
594-1 to 6 Practicum in Special Education.
595-1 to 12 (1 to 6) Internship.
599-2 to 6 Thesis.
600-1 to 32 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Speech Communication (Department, Major, Courses)

The Department of Speech Communication offers courses in the history, theory and application of communication. Program specializations prepare majors for professional, artistic, and instructional careers in human communication. The department also sponsors cocurricular activities in debate, forensics, oral interpretation, creative drama, and public relations, all of which are open to nonmajors.

To meet requirements for a major in the Department of Speech Communication, a student must demonstrate the following basic skills: the ability to deliver effec-

tive public speeches and oral performances of literature; the ability to write clear, correct English prose; the ability to communicate effectively at the interpersonal level as well as in small and large groups; and the ability to understand and apply the theory and research which are relevant to the student's program specialization.

These competencies may be demonstrated by completing any of the major programs described below and by receiving no grade lower than *C* in the courses listed in the *Requirements for Major in Speech Communication* section of the specialization selected by the student. Under certain circumstances, a student may elect to demonstrate a competency by passing a proficiency examination administered by the Department of Speech Communication.

Bachelor of Science Degree, College of Communications and Fine Arts

SPEECH COMMUNICATION MAJOR — COMMUNICATION ARTS AND STUDIES SPECIALIZATION

General Education Requirements	45
Must include GE-C 200, GE-D 152 or 153	
Requirements for Major in Speech Communication	36
Speech Communication 221, 230, 261, 262, 325, 370	18
Electives in Speech Communication which must include at least three 400-level courses	18
Electives	39
Total	120

SPEECH COMMUNCATION MAJOR — ORAL INTERPRETATION SPECIALIZATION

General Education Requirements	45
Must include GE-C 200, GE-D 152 or 153, GE-E 103d (2 hours), GE-B 202 strongly recommended	
Requirements for Major in Speech Communication	54
Speech Communication 221, 230, 261, 262, 325, 370, 390-3, 433, 471, 472, 474, 491-3	36
English literature courses	12
Courses to be determined in consultation with adviser	
Theater 213, 217	6
Electives	21
Recommended that electives be in speech communcation, music, film, sociology, psychology, English, theater	
Total	120

SPEECH COMMUNICATION MAJOR — PUBLIC RELATIONS SPECIALIZATION

The public relations specialization is an interdisciplinary program designed with the assistance of the Public Relations Society of America.

Building upon the liberal arts and sciences required of all students in the general education program, the curriculum provides fundamental knowledge in social science, business management, marketing, political science, and research methods, and in communication through all types of media. The broad coverage of these disciplines provides a sound preparation for careers and graduate studies in public relations and the several areas included. Through flexibility in the choice of restricted electives, the students are able to select courses in the field of their special interests in preparing for graduate work and specific careers goals.

Membership in the Raymond D. Wiley Chapter of the Public Relations Student Society of America provides opportunities for internships, field trips, job placement, involvement in on- and off-campus public relations projects, and association with the professional practitioners.

The active internship program enables selected students to obtain work-study

experiences under the supervision of qualified practitioners in industrial, educational, and non-profit organizations. In most cases, academic credit is earned, and the student sometimes receives a stipend to defray living expenses.

General Education Requirements 45
Must include GE-B 202, 212, GE-D 152 or 153, Economics 214 substitutes for GE-B 211
Requirements for Major in Speech Communication 71
Speech Communication 280, 326, 381, 382, 480, 481 19
Journalism 300, 310, 311, 315 (may substitute Design 322), and any other 3 hour course in journalism (312, 341, or 370 recommended) 15
Radio-Television 300m 4
Psychology 307 3
Administrative Sciences 304 3
Marketing 304, 363 6
Computer Science 102 or 202 or Accounting 210 3
Political Science 340 or 213 3
Restricted electives 15
Selected from speech communication, administrative sciences, marketing, finance, economics, political science, psychology, sociology, English. Some recommended courses are: Speech Communication 390 (may be repeated to a total of 3 hours), 362, 451, 483; English 290, 390 or other approved English writing courses. Courses in journalism or radio-television do not count as a part of the restricted electives.
Internship: Speech Communication 494-1 to 4. The internship practicum in public relations is open to selected students with consent of the instructor. Hours taken here apply against 15 hours of restricted electives or other subsitutions approved by the instructor.
Typing: Proficiency of 30 words per minute required.
Electives 4
Total 120

Bachelor of Science Degree, College of Communications and Fine Arts or College of Education

SPEECH COMMUNICATION MAJOR — COMMUNICATION EDUCATION SPECIALIZATION

General Education Requirement 45
Must include GE-B 202 and 212 or 301, GE-C 200, GE-C literature, GE-D 152 or 153, GE-E 201 and two hours of physical education courses.
Requirements for Major in Speech Communication 48
Speech Communication 221, 230, 261, 262, 325, 370, 432 21
Mass media courses selected from the following: Radio-Television 300m, 300p, 467; Journalism 300, Speech Communication 452 6
Theater 217 and 354 or 402a 6
15 hours of special electives in Speech Communication approved by the departmental adviser or an approved minor 15
Professional Education Requirements (including Speech Communication 431) 27
See Teacher Education Program, page 66.
Speech Communication 230 and 390 substitute for Education 312.
Total 120

Bachelor of Arts Degree, College of Liberal Arts

General Education Requirements	45
Must include GE-C 200 and GE-D 152 or 153	
Supplementary College Requirements (See Page 75)	(4) + 8-14
Requirements for Major in Speech Communication	36
Speech Communication 221, 230, 261, 262, 325, 370	18
Speech Communication electives which must include at least three 400-level speech communications courses	18
Electives	25-31
Total	120

Minor:

A 15-hour minor in speech communication should be planned in consultation with the chairperson of the department or the undergraduate adviser. Students electing speech communication as a minor in a teacher education program must include Speech Communication 431.

Courses

Courses in speech communication are listed according to numerical order. However, the second digit in the course number indicates its locus in the speech communication curriculum, as follows:

00-09 Research Methods
10-19 Rhetoric and Criticism
20-29 Public Speech Communication
30-39 Speech Education
40-49 Language Behavior
50-59 Political Speech Communication
60-69 Interpersonal Speech Communication
70-79 Oral Interpretation
80-89 Organizational Speech Communication
90-99 Applied and Special Studies

100- Speech Communication Workshop. A workshop in debate, oral interpretation or public speaking for secondary school seniors interested in intensive study in one or more of these areas.

221-3 Advanced Public Speaking. The components of effective speech, with actual preparation and presentation of several types of speeches. Prerequisite: GE-D 153 or consent of instructor.

230-3 Introduction to Speech Communication Theory. Introduction to speech communication theory. Examination of history and theoretical issues as a basis for understanding applied communication areas.

258-1 to 30 Work Experience. Credit given for work experience by students enrolled in the Department of Speech Communication. Such credit is granted upon approval of the undergraduate adviser.

261-3 Small Group Communication. Introduction to small group communication and the small group process. Special emphasis given to problem-solving discussion groups.

262-3 Interpersonal Communication II. Focuses on face-to-face interaction and intergroup relations by combining information about human communication and practice in communication. Utilizes the laboratory method for learning to establish and develop communicative relationship with others. Prerequisite: GE-D 152 or consent of instructor.

280-3 Business and Professional Communication. A survey of communication theory pertaining to business and professional settings. Provides practice applicable to interviews, conference briefings, and presentation techniques. Prerequisite: GE-D 152 or 153.

310-2 Speech Composition. Rhetorical techniques of public address. Two major speeches prepared, with every possible refinement. Prerequisite: 221.

325-3 Argumentation and Debate. Through the study of argument, evidence, reasoning and oral advocacy this course seeks to insure competence in the ascertainment of truth by investigation and research and the establishment of truth through proof. The ultimate rationale for the course is the discovery and support of intelligent decisions. Prerequisite: 221, or 280, or GE-D 153, or consent of instructor.

326-3 Persuasion. The means of influencing individuals and groups through communica-

tion. Emphasizes the shaping of other's values, beliefs, attitudes and behavior primarily by the spoken word. Provides theoretical information about and practice in persuasive speaking, for sources and targets of persuasion.

340-3 Introduction to Language Acquisition. Interdisciplinary approaches to the interaction between language acquisition and communication development. Topics include nonverbal communication, phonology, syntax, semantics, and pragmatics. Provides a background for those working with young children.

341-3 Introduction to Intercultural Communication. (Same as Linguistics 341.) Examination of the elements and structure of intercultural and transracial communication in the United States. Designed to analyze and describe the interaction between social perception and expression as manifest in verbal and nonverbal behavior. Emphasis on the functional communication of minority groups. Prerequisite: 262 or GE-D 152 or consent of instructor.

358-3 Political Campaigns and Elections. (See Political Science 318.) Elective Pass/Fail.

361-3 Nonverbal Communication. Nonverbal factors that influence the communicative interaction among persons. Review research findings and conduct projects germane to nonverbal communication. Readings, discussions, and research projects. Prerequisite: 262 or consent of instructor.

362-3 Communication and Social Process. Introduction to the phenomenology of human communication and social process. Analysis and description of interpersonal communication in the development and operation of human communities. Special emphasis is given to the nature of persons, consciousness, and communication exchange in society.

370-3 Oral Interpretation II. Theory and practice in advanced interpretation techniques, with emphasis on the student as performer. Prerequisite: GE-C 200 or consent of the instructor.

371-3 Storytelling and the Oral Tradition. Theory and practice in the art of storytelling with emphasis upon practical application, source materials, and historical and ethnic backgrounds.

381-3 Public Relations Policy and Practice. Philosophy, principles, policies, and practice of public relations. Historical review of industrial, governmental, and agency PR; managerial and communicative functions; internal and external publics. Lecture, audiovisual media, and guest public relations practitioners. Prerequisite: junior standing.

382-4 Research Methods in Public Communication. An introductory survey of methods and techniques of audience analysis and public opinion research. Designed especially for public relations specialization. Instruction in the design of research tools, sample selection, interviewing, and the use of the computer for data analysis.

383-3 Interviewers and Interviewing. Planning, conducting, and analyzing interviews with emphasis on roles of interviewer and respondent in professional and organizational communication settings. Study of factors affecting accuracy, openness, and goal attainment in use of interview methods for evaluation and research. Individual and small group projects with selected aspects of interviewing. Prerequisite: 262 or 280 or consent of instructor.

390-1 to 6 Applied Communication. Supervised individual and group performance in various communication arts. Emphasis on the practical application of verbal skills. May be repeated for credit. A maximum of six hours may be counted toward a speech major; a maximum of six hours toward degree requirements. Prerequisite: consent of instructor and department adviser. Mandatory Pass/Fail.

401-3 Communication Theories and Models. An introduction to theory construction and model utilization in communication research. Critical analysis of existing communication theories in the social sciences as a basis for generating new models. Emphasis on the heuristic nature and function of the language/speech act paradigm in communication studies.

411-3 Rhetorical Criticism. Designed to develop the student's ability to criticize public discourse, including speeches, written works, and the mass media.

421-3 to 9 (3, 3, 3) Studies in Public Address. Critical studies of speakers and issues relevant to social and political movements dominants in national and international affairs. A lecture, reading, and discussion course. Students may repeat enrollment to a total of nine hours. Prerequisite: for undergraduates, 411 or consent of instructor.

430-3 Speech in Elementary Schools. Survey of normal speech development with emphasis on the elementary school years. Concept of speech as skill to basic reading, writing, and spelling. Psychological and sociological variables affecting language as it relates to school learning. Speech experiences supportive of the child's linguistic, intellectual, and social development.

431-3 Speech in Secondary School. Philosophy of speech education, and effective teaching of speech through curricular and extra-curricular work. Prerequisite: twelve hours of speech.

432-3 Secondary School Forensic Program. Designed to evaluate and plan the proper role of forensics in the secondary school and to prepare the students for their tasks as teachers and administrators in that program. Students enrolled as majors in speech communication with a specializatin in communication education must complete this course before enrolling for student teaching. Not for graduate credit. Prerequisite: 325, GE-C 200.

433-3 Creative Drama for Children. Materials, techniques, and procedures for conducting

sessions in informal drama with emphasis upon its contribution to the total growth and development of the child. Includes lectures, observations, student participation.
435-3 to 6 (3, 3) Topics in Creative Drama. An exploration of advanced theories and techniques for conducting sessions in informal drama. Topics vary and are announced in advance. Students may repeat enrollment in the course, since the topics change. Lecture, discussion, class projects, school visitations.
440-3 Language Behavior. Study of linguistic approaches to speech communication based on behavioral determinants such as culture, history, speech community, value orientations, social perception and expression, and the nature and function of interpersonal transaction. Prerequisite: 340 or consent of instructor.
441-3 Intercultural Communication. Application of semiotic and cultural theories to language behavior. Emphasis on speech communication as an approach to the study of intercultural communication. Prerequisite: 341 or consent of instructor.
442-3 Psychology of Human Communication. Nature, development, and functions of verbal and nonverbal behavior; application of psychological theories and research to the communication process in individuals and groups. Emphasis on the systemic nature of communicative behavior.
443-3 General Semantics. Formulations from the works of Alfred Korzybski and from neo-Korzybskian interpreters are presented. General semantics is discussed as an interdisciplinary approach to knowledge. Relationships are made to contemporary problems in human affairs.
444-3 Studies in Language Acquisition. Research in and theories of the development of verbal and nonverbal language with attention to the maturational process. Includes investigation of social, phonological, syntactical, and semantic coorelates of communication development. Appropriate for advanced students interested in working with or conducting research involving children.
446-4 Sociology of Language and Signs. (See Sociology 451.)
451-3 Political Communications. (Same as Political Science 418.) A critical review of theory and research which relate to the influence of communication variables on political values, attitudes, and behavior. Prerequisite: 358 or consent of instructor.
452-3 Interpersonal Communication and the Mass Media. A review, synthesis, and analysis of communication theory and research which deals with the process, interactive nature of interpersonal and mass channels of communication. Prerequisite: 401 or consent of instructor.
460-3 Small Group Communication: Theory and Research. A critical examination of small group theory and research in speech communication. Emphasis is given to the development of principles of effective communication and decision-making in the small, task-oriented groups. Prerequisite: 261 or consent of instructor.
461-3 Laboratory in Interpersonal Communication I. Interpersonal communication is studied as human encounter. The philosophy and theoretical bases of existential phenomenological approaches to human communication are discussed. Projects are evolved by small groups that contribute to the understanding of human communication.
462-3 Laboratory in Interpersonal Communication II. Various theories of social and cultural change are explored. The role of interpersonal communication in the development of human consciousness is explicated. Projects are evolved by small groups that examine values and priorities of human nature and cultural nature.
465-3 Philosophy of Language. (See Philosophy 425.) Elective Pass/Fail.
471-3 Prose Fiction in Performance. Study of prose fiction through analysis and individual performance. Includes scripting techniques for chamber theatre. Prerequisite: 370 or consent of instructor.
472-3 Poetry in Performance. The study of poetic form through analysis and performance. Prerequisite: 370, GE-C 200 or consent of instructor.
474-3 Readers Theatre. A study of the theory and practice of Interpreters Theatre, with special emphasis on adapting and compiling scripts for group performance in Readers Theatre. Prerequisite: 370 or consent of instructor.
475-3 Interpreters Theatre Production. Theory and practice in presentational staging of prose, poetry, and drama. Includes directing and performance experience in Readers Theatre and Chamber Theatre. Prerequisite: 471 or 474 or consent of instructor.
476-3 Writing as Performance. An examination of the practical and theoretical links between composition and performance. Lectures, readings, and assignments focus on performance as a means and an end to creative writing.
480-3 Dynamics of Organizational Communication. Introduction to interrelationships of communicative behaviors and attitudes with organizational policies, structures, outcomes. Uses case studies and role-plays to teach principles. Individual research into selected aspects of organizational communication. Prerequisite: 280, 442, or consent of instructor.
481-3 Public Relations in Cases and Campaigns. Advanced course in selected case studies provided by the Public Relations Society of America and other sources. Student groups

design actual or simulated public relations campaigns through the four steps of research, planning, communictions, and evaluation. Prerequisite: 381 and 382.
483-3 Studies in Organizational Communication. Study of communication systems and behaviors within organizations. Consideration of relevance of communication to management operations, employee morale, networks, superior-subordinate relations, production, and organizational climates. Individual research into selected aspects of organizational communication. Prerequisite: 480 or consent of instructor.
490-1 to 6 Communication Practicum. A supervised experience using communication skills. Emphasis on the development of performance skills in the following areas: **(a)** Communication studies. **(b)** Performance activity. **(c)** Interpersonal communication. **(d)** Debate and forensic activity. **(e)** Political communication. **(f)** Organizational communication. **(g)** Instructional communication. May be repeated for credit. Undergraduates limited to a total of six hours and graduate students to three to be counted toward degree requirements.
491-1 to 3 Independent Study in Communication. Readings, creative projects, or writing projects focusing on a theoretical study of communication. The independent study should normally be completed in one semester under the tutorial supervision of a faculty sponsor. Not for graduate credit. Prerequisite: twelve hours of speech, consent of instructor and departmental adviser.
492-2 to 8 Workshop in Oral Interpretation. Summer offering concentrating in specialized areas of oral interpretation.
493-3 to 9 (3, 3, 3) Special Topics in Communication. An exploration of selected current topics in communication arts and studies. Topics vary and are announced in advance; both students and faculty suggest ideas. Students may repeat enrollment in the course, as the topic varies.
494-1 to 4 Internship in Public Relations. A supervised experience using public relations skills in a professional or career setting. Maximum of four hours to be counted toward degree requirements. Not for graduate credit. Prerequisite: consent of instructor. Mandatory Pass/Fail.
501-3 Introduction to Speech Communication Research.
502-3 Seminar: Quantitative Communication Research.
503-3 Seminar: Phenomenological Communication Research.
510-3 to 6 (3, 3) Seminar: Rhetoric and Communication.
526-3 Seminar: Studies in Persuasion.
531-3 Seminar: Speech Education.
539-3 Speech Communication at University Level.
540-3 Seminar: Language, Cultural and Semiology.
545-3 Seminar: Semiology and Semiotic Communication.
561-3 to 6 (3, 3) Studies in Small Group Communication.
562-3 Philosophy of Human Communication.
563-3 Studies in Interpersonal Communication.
571-3 Theory and Criticism in Interpretation: Pre-Twentieth Century.
572-3 Theory and Criticism in Interpretation: Twentieth Century.
574-3 to 6 (3, 3) Studies in Interpretation.
580-3 to 9 Issues in Organizational Communication and Public Relations.
593-1 to 3 Research Problems in Communications.
595-1 to 3 Research Report.
598-0 Proseminar in Human Communication.
599-1 to 6 Thesis.
600-1 to 36 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Speech Pathology and Audiology

(SEE COMMUNICATION DISORDERS AND SCIENCES)

Technical Careers (School, Courses)

The School of Technical Careers offers the Associate in Applied Science and the Bachelor of Science degrees. The degree programs are listed alphabetically in this chapter. Requirements for admission and program completion vary and are stated within the description for each program.

Associate in Applied Science degrees are available in a variety of technical pro-

grams ranging from aviation maintenance to tool and manufacturing technology. Third-year specializations are available in certain program areas to further the student's technical knowledge.

The Bachelor of Science degree is designed to provide technically-oriented programs of study which are made up of both management and advanced technical course work. Details of each major area of study are listed under Advanced Technical Studies, Interior Design, or Consumer Economics and Family Management.

The following general education and technically-related courses are taught within the School of Technical Careers. They serve as common requirements for various majors. Some of the courses are also available to students enrolled in other academic units.

Courses

101-2 Business Correspondence. To equip students for effective letter writing so that they can compose letters quickly, easily, and efficiently as a basic goal of this course. It will help the student form good habits that will facilitate adaptability in the business world. The student will strive to develop naturalness, courtesy, tact, honesty, and a positive attitude in the construction and use of business correspondence. Lecture and individualized instruction two hours.

102-2 Technical Writing. To successfully complete this course, students should be proficient in particular writing techniques (technical description, definition, classification, abstracting, etc.) and follow through a library or field research project in their individual technical fields. Lecture and individualized instruction. Prerequisite: GE-D 101.

103-2 Fundamentals of Mathematics. This course is pre-technical level intended for those who have had no high school algebra or whose scores on the School of Technical Careers Mathematics Placement Test indicate a need for it. The course will enable the student to perform the fundamental operations with integers, common fractions, and decimals; to solve problems involving ratio, proportion, and percent; to use measurement concepts and geometric formulas to compute areas, volumes, and perimeters; and to perform basic algebraic operations. Semi-programmed instruction. Four hours per week.

105-4 (2,2) Technical Mathematics. Will enable the student to solve problems within the context of engineering technologies. **(a)** Emphasizes the use of algebraic equations and geometric relationships and formulas, and right triangle trigonometry. Lecture-discussion, four hours per week for eight weeks. Prerequisite: one year of high school algebra or equivalent. **(b)** Emphasizes the application of trigonometric relationships to problems in applied technologies, and contains additional topics in algebra including linear systems, quadratic equations, and exponential and logrithmic functions. The use of electronic calculators is encouraged when appropriate. Lecture-discussion, four hour per week for eight weeks. Prerequisite: 105a or equivalent.

107-4 (2,2) Applied Physics. Places emphasis on basic and applied physics at a level consistent with technical education objectives. The student will learn laws and principles and solve problems pertaining to **(a)** mechanics and the structure of matter, **(b)** heat and electricity. Lecture-discussion four hour per week. Prerequisite: 105a or equivalent.

108-2 Chemistry of Fuels and Lubricants. The student will demonstrate the ability to analyze fuels and lubricants and detect impurities and contaminates. (Lecture two hours, Laboratory three hours. Eight weeks.)

115-5 (2,3) Introduction to Chemistry. **(a)** Inorganic. The student will study the structure of matter, including a survey of common elements and compounds and the changes during chemical reactions, and will also study inorganic bases, salts, solutions, the periodic tables, equation balancing, and metric tables. (Lecture three hours. Laboratory two hours. Eight weeks.) **(b)** Biological. The student will study the chemistry of organic compounds, carbohydrates, proteins, and lipids relating them specifically to body functions. The student will also study the chemistry of digestion, metabolism, respriation, blood enzymes, hormones, and vitamins. (Lecture four hours. Laboratory three hours. Eight weeks.) Mut be taken in a,b sequence.

118-2 Applied Calculus. Upon successful completion of this course, the student will be able to find derivatives and integrals of algebraic expressions, and will use this working knowledge of calculus as a tool to solve technical problems in the mechanical, civil, and electrical-electronic fields; to converse intelligently with engineers and scientists who speak the language of calculus; and to read technical articles written in that language. Lecture-discussion two hours. Prerequisite: 105 or Mathematics 111.

120-3 Fiscal Aspects of Technical Careers I. An individualized program of instruction designed to acquaint students enrolled in the various technical programs of the School of Technical Careers with applications and procedures common to their area of specialization. Students will be able to demonstrate a basic working knowledge of the standard documents and procedures related to their specific area through the use of business working

papers and practice sets. Open only to students in the School of Technical Careers. Lecture three hours.

153A-2 Oral Reporting. Successful completion of this course equips the student to construct and execute effective informative oral communications, recognize and use basic methods of logical organization, make a logical and coherent oral progress report, and take a more positive role in the world of business and industry. Lecture and individualized instruction, four hours per week. Eight weeks.

153B-2 Conference Methods. Upon successful completion of this course, the student will be able to identify and use basic problem solving methods, take a positive role in a typical business conference, and effectively manage the mechanics of dyadic and public oral communications within the typical business framework. Lecture, individualized instruction, and special projects, four hours per week. Eight weeks.

199-1 to 10 Individual Study. Provides first-year students with the opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chairperson.

210-4 (2,2) Job Orientation and Analysis. **(a)** Special instructional sessions offered on personality, clothing, job application, and professional ethics. Preparation of a portfolio consisting of a personal data sheet, an analysis of prospective employing firms, sample letters of application, and an acceptance or refusal. Practice in being interviewed by representatives of business and industry. **(b)** Students will be required to discover their interests in career opportunites, to explore these fields, and to discover job opportunities in their interest areas. Lecture four hours. Need not be taken in sequence.

215-6 (3,3) Drafting Graphics. Use of drafting instruments, development of lettering and linework; geometric construction, orthographic projections, sections, reflected plans, pictorial drawings, perspective, shades and shadows, and their adaption to print reading and production. **(a)** Instruments, lettering, linework, geometric construction, orthographic projections, sections, reflected plans, shades and shadows, non-perspective pictorial drawings. One hour lecture, five hours lab. Taken concurrently with Interior Design 231. **(b)** Perspective drawing methods, both interior and exterior with emphasis on interior perspectives including Klok Board, direct measurement, Lockard freehand perspective, geometric relationships, and shades and shadows and reflections in perspective drawings. One hour lecture, five hours laboratory. Must be taken in a,b sequence.

220-3 Fiscal Aspects of Technical Careers II. A continuation of 120 for selected curriculum areas. Emphasis on continued development of knowledge and skills typically involved in small business management, ownership, partnerships, and corporations. New areas of study will include automated data processing, cost estimating, and payroll tax procedures through the use of business working papers and a practice set. Prerequisite: 120.

258-1 to 30 Work Experience Credit. Credit granted for job skills, management-worker relations and supervisory experience for past work experience while employed in industry, business, the professions, or service occupations. Credit will be established by departmental evaluation.

259-1 to 60 Occupational Education Credit. A designation for credit granted for past occupational educational experiences related to the student's educational objectives. Credit will be established by departmental evaluation.

299-1 to 16 Individual Study. Provides students with opportunity to develop a special program of studies to fit a particular need not met by other offerings. Enrollment provides access to the resources and facilities of the entire institution. Each student will work under the supervision of a sponsoring staff member. Prerequisite: approval of the sponsor, program supervisor, and division chairperson is required.

415-3 On Dying and Death. Students will study the process of death, grief, and bereavement. Emphasis on the practical aspects of coping with the many problems concerning death. Not for graduate credit.

Technology (Department)

Two degree programs are available in technology. One program leads to the Bachelor of Science degree with a major in engineering technology (see Engineering Technology) with specialization in one of three areas: civil engineering technology, electrical engineering technology, or mechanical engineering technology. The other program leads to the Bachelor of Science degree with a major in industrial technology (see Industrial Technology) with specialization in one of three areas: industrial technology, industrial technology-occupational, or mining technology.

Engineering technology courses contain topics related to the design and devel-

opment of products. Industrial technology courses contain topics related to the manufacture and distribution of products.

The present technological society has increased the demand for new types of personnel known as technologists. A technologist utilizes established methods to achieve improvements in existing designs and systems. Technologists should be knowledgeable in the state of the art of a particular technology, capable of utilizing handbooks and other forms of codified information with skill and discrimination, and sufficiently versed in mathematics and science to recognize sound procedures.

The technology programs are flexible enough to provide the means whereby a graduate of a two-year occupational program can obtain a bachelor's degree in a minimum length of time. The industrial technology program provides credit to individuals for related work experience outside the institution.

The programs are designed to provide the necessary training for entry into employment upon the combination of the baccalaureate degree. Opportunities for advanced study are available in business-related fields or in education.

Theater (Department, Major, Courses)

The Department of Theater blends scholarship and practice into an academically based theater experience preparing the student for a career in professional, educational, or community theater, as well as establishing a solid academic foundation for many complementary fields. The extensive production schedule in two theaters — a proscenium house, the McLeod Theater, seating about 500 and a flexible Laboratory Theater seating about 100 — provides training in all aspects of theater, augmented by courses in acting, voice, movement, directing, playwriting, design, and technical theater. Courses in theater history, dramatic theory and criticism and specialized courses such as children's theater and theater management complement the program. The production schedule is extensive enough to allow students the opportunity to design sets, lights, costumes, and to write, act, and direct for these productions. Seminars in international and ethnic theater and drama coordinated with ongoing research projects and visits of artists-in-residence enhance the total experience.

In addition to the General Education requirements, all theater majors must complete a theater core curriculum of 27 semester hours and the requirements in one of these specializations listed below, comprised of theater courses and selected courses in other schools and departments. Majors must earn a minimum of 12 hours in 400-level theater courses beyond the theater core. A grade of *C* or better is required in all courses to be counted as part of the theater core. Although a minor is not required, the student may consider complementary minor fields such as art, clothing and textiles, computer science, dance, English, foreign languages, history, journalism, music, philosophy, psychology, recreation, sociology, and speech communication.

Theater course credit earned at other institutions of higher learning, not used for General Education requirements at the time of transfer, can be applied to the Bachelor of Arts degree program with the approval of the faculty of the Department of Theater.

Bachelor of Arts Degree, College of Communications and Fine Arts

General Education Requirements 45
Must include GE-C 103.

Requirements for Major in Theater 75
Theater Core Curriculum 27

Theater 218a	3
Theater 218b, or c	3
Theater 217	3
Theater 300	3
Theater 311a	3
Theater 354a, b	6
Theater 402a	3
English (dramatic literature)	3
Theater Specialization (Requirements listed below)	48
Total	120

THEATER MAJOR — ACTING-DIRECTING SPECIALIZATION

Theater 317a, b, 417a	9
Theater 213a, b,	6
Theater 203a, b	6
Theater 403a	2
Theater 402b (Required for students whose primary interest is directing)	3
Electives	22-25
Total	48

Qualified students in the acting-directing specialization may take an additional course of speech study (Theater 403b) or acting (Theater 417b) or movement (413a,b) with the consent of the instructor. Students whose primary interest is directing are urged to take Theater 207 and 307.

THEATER MAJOR — DESIGN-TECHNICAL SPECIALIZATION

Theater 218b or c	3
Theater 207, 307, 407	9
Theater 414a	3
Theater 418	3
Art (by advisement)	6
Theater electives	12
Electives	12
Total	48

THEATER MAJOR — PLAYWRITING-DRAMATIC LITERATURE SPECIALIZATION

Theater 311b, 411a, 411b	9
Theater 402b	3
English 460, 462, 464, 465 (select one)	3
English 468	3
Radio and Television 300M or Cinema and Photography 452	3-4
Theater electives	14-15
Electives	12
Total	48

Minor

Requirements for Minor in Theater	15

A minor in theater consists of Theater 311a, with GE-C 103 as a prerequisite, plus any combination of theater courses to reach a total of 15 semester hours.

Courses

203-6 (3,3) Voice and Diction. (a) Voice Production. Basic training in control of breathing, vocal tone, resonance, and vocal power for the beginning actor. (b) Diction. Consonant and vowel production; pronunciation for the actor. Prerequisite: 203a.
205-2 Stage Make-Up. Theory and technique of various types of make-up. Supplies, at least $10 per semester.
207-2 Drafting for the Theater. Development of the student's skill in scenographic techniques including ground plans, sections, elevations, and detail construction drawings.
213-6 (3,3) Stage Movement. Fundamentals of movement for the performer. (a) Body awareness/assessment; increasing control and exploring basic elements of movement. (b) Applications of basic elements to characterization. Elementary combat techniques and use of props and costume will be introduced. Must be taken in a,b sequence.
217-3 Acting. Preparing the actor's instrument through Stanislavskian technique; concentration/relaxation exercises; improvisations. The course objective is the discovery and development of the actor's inner resources. Contemporary American plays are studied from the actor's point of view. Readings are selected from the work of Stanislavsky, Boleslavsky, and Michael Chekhov. A final scene is chosen from the genre of American realism. Elective Pass/Fail.
218-9 (3,3,3) Beginning Stagecraft. (a) Fundamentals of scenic construction and stage rigging and fundamentals of stage lighting including basic tools, equipment, handing, focusing, and maintenance and basic techniques of constructing and handling stage costume. (b) Basic investigation of stage lighting design, theory, and professional practice. Special attention will be focused on color theory and its application to stage lighting. (c) Basic techniques of constructing and handling stage costume.
260-1 to 15 Internship. Off-campus internship which is related to the major program but not part of a regular instructional course. Written reports are required of student and supervisor. Prerequisite: theater major; written proposals must be approved by undergraduate adviser and curriculum committee prior to internship. Mandatory Pass/Fail.
300-3 Theater Practicum. Theater practicum offering students an opportunity to increase their skills in stagecraft and stage lighting by working on department productions. Prerequisite: 218a.
307-3 Stage Design I. The design of settings for the stage and other dramatic media. Prerequisite: 207, 300. Elective Pass/Fail.
311A-3 Play Analysis. Development of basic skills in play analysis and application of these skills to a variety of dramatic forms through class discussions and written assignments. Prerequisite: GE-C 103 or one course in dramatic literature.
311B-3 to 6 Playwriting Workshop for Actors. Practical experience in acting in original plays combined with class discussions and critiques. Actors attend class sessions as well as rehearsals and have their work progressively evaluated. Six credit hours are awarded for the more intensive workshop sessions in the summer while three credits are available during the academic year. Workshop productions are staged in cooperation with 511. Prerequisite: audition. Elective Pass/Fail.
317-6 (3,3) Intermediate Acting. (a) Continuation of the actor's development of inner resources with emphasis on characterization. Mask and body center exercises; characterization through costume, props, music. Discussion of the techniques of outstanding actors. Prerequisite: 217. (b) Preliminary scene study. Emphasis on American realism. Extended scenes rehearsed and performed. Written character analyses required. Prerequisite: 203a, 213a, 317a.
318-3 Advanced Stagecraft. Advanced study of the principles and procedures of scenic construction and stage rigging. Includes fundamentals of scene shop organization, materials, and specialized stage equipment. Three hours lecture and laboratory to be arranged. Prerequisite: 218a, b, and 307.
322-1 to 12 SIU Summer Theater. Practical experience in summer stock play production. A maximum of twelve credit hours may be accumulated for performance or technical work in SIU Summer Theater only. Open to majors or non-majors. Prerequisite: audition or consent of instructor.
323-1 to 6 Practicum for Non-Majors. Practical experience in non-performing production areas for non-majors. Up to six hours may be taken at one time. This course may not be applied to a major in theater. Prerequisite: audition or consent of instructor.
354-6 (3,3) History of the Theater. (a) Theater history from primitive times through the 17th century. (b) Theater history from the 18th century to the present.
390-1 to 6 Independent Study. Independent work on selected problems in academic or blend of academic and creative research. A maximum of three hours may be taken for a single project and a cumulative maximum of six hours may count toward the degree. Prerequisite: majors only; written proposals; consent of undergraduate adviser and instructor.
400-1 to 6 (1 to 2 per semester) Production. Practicum for support of major department productions in all areas. Roles in department productions may fulfill requirement.

402-6 (3,3) Play Directing. (a) Introduction to directing. The history of the director; the evolution of the director into a position of predominance in modern theater hierarchy. The function of the director; an examination of theoretical viewpoint. Textual analysis; establishing the groundwork for the director's approach to production. Prerequisite: junior standing; 217 and 311a; or consent of instructor. (b) The principles of play direction including play selection, analysis and patterning of auditory and visual elements of production. Directing of a one-act play. Prerequisite: consent of instructor.
403-4 (2,2) Advanced Theater Speech Studies. (a) Standard stage speech. Advanced training in vocal variety and flexibility. Expanded work with phonetics and application to play readings, poetry, etc. Prerequisite: 203b for undergraduates, no prerequisite for Master of Fine Arts acting students. (b) Vocal characterization. Applications of standard speech to characterization, verse plays, etc. Includes an approach to common American dialects. Prerequisite: 403a.
404-3 Theater Management. Discussion of legal and financial aspects concerning the professional and community theaters of the United States. Consideration of and practice in managerial activities of an educational theater including administration, purchasing, and accounting practices, direct sales, publicity, promotion, and public relations.
407-3 Stage Design II. Advanced work in design of settings for the stage and other dramatic media. Prerequisite: 307 or consent of instructor. Elective Pass/Fail.
408-3 Model Making. The craft of scenic model making for the stage and other dramatic media. Prerequisite: 407 or consent of instructor. Elective Pass/Fail.
410-3 Children's Theater. Study of methods and their practical application of introducing children to theatre and theatrical productions as an art form. Includes the writing of a short play for children. Recommended for majors in education programs.
411A-3 Playwriting — The One-Act Play. Principles of dramatic construction and practice in the writing of two one-act plays. Problems of adaptation are treated. Individual plays have the opportunity to be produced in the theater's program for new plays. Prerequisite: one course in dramatic literature for non-majors and graduates; 311a for undergraduate theater and speech communication majors; or consent of instructor. Elective Pass/Fail.
411B-3 Playwriting — The Full-Length Play. Principles of dramatic construction and practice in the writing of a full-length play, encompassing such varied types as the children's play, the musical, the outdoor historical drama, etc. In special cases, students may elect to write three short plays. Prerequisite: 411A or consent of instructor for non-majors; 311a for undergraduate theater majors. Elective Pass/Fail.
413-4 (2,2) Advanced Stage Movement. (a) Special movement problems encountered by the actor; falls, combat, mime, working with costumes, props, music. Continued work in characterization and movement skills mastery. Prerequisite: 213a, b for undergraduates; no prerequisite for Master of Fine Arts students. (b) Period styles of movement; bows, curtsies, postures, and dances. Research and practical applications. Prerequisite: 413a.
414-6 (3,3) Costume Design. (a) History of western costume from Greek to Renaissance and its adaptation to stage use. Theory and principles of theatrical costuming. Application of principles of design and color. Designs for single scenes. Elective Pass/Fail. (b) History of costume. Renaissance through 19th century. Style, fantasy, and the comic in costume design. Principles of dramatic theory and criticism as applied to costume design. Evaluation of research tools. Methods and procedures in designing costumes for a complete show. Prerequisite: 414a. Elective Pass/Fail.
417-6 (3,3) Advanced Acting. (a) Advanced scene study. Scenes from the Poetic Realists. Emphasis is on the ability to build and sustain a character. Audition technique is explored. Prerequisite: 317b or consent of instructor. (b) Elizabethan style. Scenes and soliloquies from the plays of Shakespeare, Marlowe, Jonson. Fencing and stage combat applied to scene work. Prerequisite: 417a or consent of instructor.
418-3 Advanced Stage Lighting. Investigation of stage lighting design, theory, and professional practice. Special attention will be focused on color theory and its application to stage lighting. Three hours lecture and laboratory to be arranged. Prerequisite: 218a, b, c, or consent of instructor.
454-3 American Theater. The development of American theater from colonial times to the present. Includes a study of the American musical theater from preminstrels through contemporary music-drama. Elective Pass/Fail.
489-3 to 6 Theater-Television Workshop. Advanced work in the producing, acting, writing of original television drama. Prerequisite: *C* grade in Radio-Television 300M, 300P and consent of instructor for radio-television majors; consent of instructor for theater and other majors.
500-2 Introduction to Research Methods.
501-3 Contemporary Developments.
502-3 Advanced Directing.
503-4 (2,2) Graduate Theater Speech Studies.
504-3 The Comic Theater.
505-3 The Tragic Theater.
511-3 to 6 Playwriting Workshop.

513-4 (2,2) Stage Movement for Graduate Actors.
517-6 (3,3) Graduate Acting Studio.
522-1 to 12 SIU Summer Theater.
526-3 to 12 (3 per topic) Seminar in Theater Arts.
530-1 to 12 Independent Study.
550-2 to 6 (2 or topic) Topical Seminar.
599-1 to 6 Thesis.
600-1 to 36 (1 to 16 per semester) Dissertation.
601-1 to 12 per semester Continuing Research.

Thermal and Environmental Engineering

(SEE ENGINEERING)

Tool and Manufacturing Technology

(Program, Major, Courses)

Graduates of tool and manufacturing technology machine tool (numerical control), specialization, will have the technical background to assist engineers in research, development, and testing. They will also have skills in metal cutting enabling them to follow through on jobs requiring the abilities of a tool maker.

The tool design specialization provides the in-depth training required to develop drafting skills as well as the ability to design certain types of production tooling. The blend of basic machining skills in combination with concentrated drafting and design skills provide the graduate with the technical background required to enter the manufacturing industry as qualified tool design technicians.

For those students whose career objectives are directed to the areas of welding and fabrication, the metal fabrication and processes specialization provides an opportunity to blend basic machining skills with welding and fabrication skills in addition to developing the technical background necessary to assist engineers in research, development, and testing.

The tool and manufacturing curriculum is designed to accept students without previous experience. Those students entering with industrial experience, or special courses which were taken during military training, will be given course credit. Transfer students from community colleges will be accepted and given credit for course work where it is applicable. Graduates of recognized area vocational centers or private vocational schools will be given an opportunity to qualify for advanced placement and proficiency credit.

Upon completion of the tool and manufacturing program, students readily obtain positions in the areas of engineering technicians testing components and materials, pilot model makers, tool and die work, mold making, supervisors of numerical control production lines, programmers, process planners, certified welders, iron workers, draftsmen and tool designers. With additional on-the-job experience, many graduates of tool and manufacturing technology enter into supervisory positions.

The tool and manufacturing curriculum fits between the areas occupied by the mechanical and manufacturing engineer and the skilled technician. It includes theory, procedures, techniques, and skills from each of these areas and falls approximately halfway between.

Students in this program will have the advantage of courses in data processing that will give them the ability to work with computer-assisted programming for numerical controlled machines. They will learn to design and test industrial, hydraulic, and pneumatic power circuits; to read blueprints, design basic jigs and fixtures, make shop sketches, and alter existing machines for structural changes;

and to build basic progressive dies, draw dies, die casting dies, and plastic injection mold dies; fabricate and repair machinery and equipment; select proper materials and heat treat tool steels, perform sophiscated welding operations; develop process planning sequences.

Students in tool and manufacturing technology should expect to spend about $150 for instruments, tools, and supplies.

Representatives of industry serve on an advisory committee which helps to keep the program responsive to the needs in the field. Current members are: Ed Marshall, General Electric Co., Carbondale; Fred Meyers, Southern Illinois University at Carbondale, Carbondale; Edward Paulich, Norge Division, Herrin; Sue Soderstrom, Turco Manufacturing Company, DuQuoin; Charles Stallings, Mt. Vernon High School, Mt. Vernon; Wayne Wilmore, Old Ben Coal Co., Benton.

The associate degree program can be completed in two academic years at Southern Illinois University at Carbondale or in combination with community college or other acceptable extra-institutional educational experience.

Associate in Applied Science Degree, School of Technical Careers

TOOL AND MANUFACTURING TECHNOLOGY MAJOR —
MACHINE TOOL (NUMERICAL CONTROL) SPECIALIZATION

GE-D 101	3
Social science elective	3
Communication elective (speech or technical report writing)	2-3
Electronic Data Processing 208a	4
School of Technical Careers 105a, b, 107a, b	8
Tool and Manufacturing Technology 101, 102, 125, 126, 128, 1185, 186, 210, 211, 220, 221, 225, 275, 276	56
Total	76-77

TOOL AND MANUFACTURING TECHNOLOGY MAJOR —
METAL FABRICATION AND PROCESSES SPECIALIZATION

GE-D 101	3
Social science elective	3
Communication elective (speech or technical report writing)	2-3
School of Technical Careers 105a, b, 107a, b	8
Tool and Manufacturing Technology 101, 102, 125, 126, 128, 180, 181, 182, 183, 185, 225, 275, 276, 310	55
Total	71-72

TOOL AND MANUFACTURING TECHNOLOGY MAJOR —
TOOL DESIGN SPECIALIZATION

GE-D 101	3
Social science elective	3
Communication elective (speech or technical writing)	2-3
Electronic Data Processing 208a	4
School of Technical Careers 105a,b; 107a,b	8
Tool and Manufacturing Technology 101, 102, 125, 126, 128, 185, 186, 225, 230, 231, 240, 241, 275, 276	56
Total	76-77

Courses

101-1 to 7 Basic Tool and Manufacturing Laboratory. The student will perform the basic operations covering the drill press, engine lathe, shaper, and basic bench work operations involving layout and hand tools. The operation of the shaper as a unit production machine is covered. Laboratory five to fifteen hours. Student will pay shop supply charge of $1.50 per semester hours.

102-1 to 7 Milling Machine and Grinding Laboratory. The student will demonstrate ability

to set up and operate the various milling machines and grinding machines common to the tool room and manufacturing operations. Laboratory five to fifteen hours. Student will pay shop supply charge of $1.50 per semester hour. Prerequisite: 101 or consent of instructor.

125-1 to 3 Introduction to Machine Tools. The student will demonstrate knowledge of the basic machine tool operations; also, bench and hand tool techniques. Lecture one to three hours.

126-1 to 3 Machinability of Metals, Milling, and Abrasive Machining. Students will demonstrate ability to selected correct cutting speeds, feeds, and tool geometry for various alloy steels and to understand the relationship of the factors involved. They will be required to understand the various tool room and production milling machine and grinders; their construction, set-up, and operations. Lecture one to three hours. Prerequisite: 125 or consent of instructor.

128-2 Hydraulic and Pneumatic Controls. The student will be required to understand industrial fluid power and its application in industry. The student designs, tests, and implements hydraulic and pneumatic circuits that are applicable to industry. Lecture one hour. Laboratory two hours.

180-3 Welding I. The student will demonstrate ability to apply the basic procedures in oxy-acetylene welding. Lecture one hour. Laboratory four hours. Student will pay shop supply charge for laboratory courses of $1.50 per semester hour.

181-3 Welding II. The student will demonstrate ability to apply basic welding procedures in metallic arc welding. Lecture one hour. Laboratory four hours. Student will pay shop supply charge of $1.50 per semester hour.

182-3 Welding III. The student will demonstrate ability to apply basic welding procedures in T.I.G., M.I.G., and special welding and cutting applications. Lecture one hour. Laboratory four hours. Students will pay shop supply charge of $1.50 per semester hour. Prerequisite: 181 or consent of instructor.

183-2 Welding Blueprint Reading. Emphasizes the basic fundamentals of drawing interpretation as applied to welding and metal fabrication. The student will be expected to develop a core of blueprint reading skills in addition to a thorough familiarization of welding symbols and their significance. Through individualized instruction, students will progress at their own rate until course requirements have been satisfied as certified by the supervising faculty member.

185-4 Technical Drawing I. Upon completion of this course, the student should be able to read and sketch pictorial and miltiview drawings which include auxiliary views, sectional views, assemblies, weldments, up-to-date types of precision dimensioning, and many types of fasteners and machine elements. Lecture two hours. Laboratory three hours.

186-4 Technical Drawing II. Upon completion of this course the student should be able to read more complex drawings, use drawing instruments and geometric constructions where accuracy of layout is important, and design and draw simple jigs and fixtures. Lecture two hours. Laboratory three hours. Prerequisite: 185 or consent of instructor.

210-1 to 7 Numerical Control, Electrical Discharge Machining, and Tool and Die. The student will demonstrate ability to set-up and operate the numerically controlled milling machine for production jobs; to set-up and operate the electrical discharge machine on die and mold making applications; and to build progressive compound and forming dies. Laboratory five to fifteen hours. Student will pay shop supply charge of $2.00 per semester hour. Prerequisite: 102 or consent of instructor.

211-1 to 7 Advanced Numerical Control, Tool and Die, and Production Machining. Students will demonstrate ability to set-up and operate advanced production jobs on the turret lathe, tracer lathe, and numerically controlled milling machines. They will build progressive dies and mold dies. Laboratory five to fifteen hours. Student will pay shop charges of $2 per credit hour. Prerequisite: 210 or consent of instructor.

220-1 to 3 Numerical Control, Inspection Practices, and Electrical Discharge. The student will demonstrate ability to program for typical industrial jobs using point to point programming, to understand the E.D.M. process and to select proper machine settings for a given application, and to understand inspection practices and precision measuring procedures. Lecture one to three hours. Prerequisite: 126 or consent of instructor.

221-1 to 3 Tool and Die, Production Machining, and Process Planning. The student will demonstrate ability to process plan and run cost estimates on typical production jobs; to understand basic die design and components in relation to progressive compound and forming dies, and to understand production processes. Lecture one to three hours. Student will pay shop supply charges of $2 per credit hour. Prerequisite: 220 or consent of instructor.

225-2 Manufacturing Processes. A study of the techniques required to coordinate a diverse variety of manufacturing processes into the making of acceptable products. Special emphasis will be made on the role of the technician in the choice and application of selected processes. Lecture two hours. Prerequisite: 221 or consent of department.

230-2 to 7 Tool Design I. Tool design practices with emphasis on jigs, fixtures, and gages. Students will develop design concepts and prepare working drawings of production tooling with particular emphasis on manufacturing sequence, quality control, and utilization of

standard components. Laboratory 3 to 10 hours. Material and supply cost $.75 per credit hour. Prerequisite: 186 or consent of instructor.

231-2 to 7 Tool Design II. Die design practices with emphasis on blanking, piercing, compound, and forming dies. Students will develop design concepts and prepare working drawings of dies in accordance with die design standards and utilization of standardized die components. Laboratory 3 to 10 hours. Material and supply cost $.75 per credit hour. Prerequisite: 230 or consent of instructor.

240-3 Fundamentals of Jig, Fixture and Gage Design. A study of the principles involved in developing appropriate tool design concepts. Such factors as processing sequence, clamping techniques, locating devices, and dimensional tolerances will be studied with appropriate considerations given to such factors as tool costs, quantity production, machine selection and operator safety. Lecture three hours. Prerequisite: 186 or consent of instructor.

241-3 Fundamentals of Die Design. A study of the principles involved in the use and design of dies used for the fabrication of sheet metal parts in punch presses. Emphasis will be on blanking, piercing, compound, and forming dies. Such factors as drafting room standards, die design standards, punch press capacity, and the use of standardized and interchangeable components will be studied in keeping with desirable levels of manufacturing costs and product quality. Lecture three hours. Prerequisite: 240 or consent of instructor.

275-2 Ferrous Metallurgy. The student will demonstrate understanding in the theory of alloys, characteristics of metals, simple phase diagrams and basic heat treating practices. Lecture two hours.

276-2 Tool Steel Metallurgy. Students will demonstrate ability to apply heat treating procedures with tool steel common to industrial uses. They must also be able to select the proper steel for the design criteria. Lecture one hour. Laboratory two hours. Prerequisite: 275 or consent of instructor.

310-6 to 24 Certified Welder Training. Students may choose a concentrated area of work such as pipe welding, boilermaking welding, or structural steel welding. Upon completion of this course students will pass the ASME code requirements in the welding area chosen. They may choose any one or all of the following processes; oxyacetylene, metallic arc, tungsten inert gas, metallic inert gas, and cored wire welding. Through individualized instruction students will progress at their own rate and may complete instruction at any time depending upon individual progress. Certified papers will be completed by the School of Technical Careers and will be given to the student or forwarded to an employer. Student will pay shop supply charge of $1.50 per semester hour. Prerequisite: completion of formal welding program or equivalent work experience.

320-1 to 12 (1 to 4 per topic) Advanced Tool and Manufacturing Studies. Provides students with an opportunity for advanced studies in their areas of interest in tool and manufacturing technology. Emphasis will be on literature search and advanced technical skills development in the students' areas of specialization. **(a)** Machine tool, i.e., numerical control programming, advanced diemaking, process planning, machinablility studies. **(b)** Metal fabrication, i.e., design of welded structures, metallurgical aspects of welding, welding quality control procedures. **(c)** Tool design, i.e., plastic mold design, interchangeable die components, tooling for automatic processes. Students will develop written project objectives with the assistance of a sponsoring faculty member and submit a final paper detailing the semester's activities. Shop and supply charges to be individually determined and specified in project objectives. Credit to be individually arranged based on the nature and complexity of the project. Prerequisite: associate degree in tool and manufacturing technology or consent of department.

Uncommon Languages (Minor)

(SEE LINGUISTICS)

University Honors Program (Courses)

111-1 Freshman Honors Colloquium. Open to freshmen. Prerequisite: consent of the director of honors opportunities.

201-1 to 9 Honors Seminar. Undergraduate honors seminar. Topics vary and will be announced by the University Honors Program each time the course is offered. Prerequisite: consent of the director of honors opportunities.

251a-1 to 8 Honors Seminar in the Sciences. Seminars in the area of the natural sciences intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Education Area A. Prerequisite: consent of the director of honors opportunities.

251b-1 to 8 Honors Seminar in the Social Sciences. Seminars in the area of the social

sciences intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Education Area B. Prerequisite: consent of the director of honors opportunities.

251c-1 to 8 Honors Seminar in the Humanities. Seminars in the area of the humanities intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Education Area C. Prerequisite: consent of the director of honors opportunities.

251d-1 to 6 Honors Seminar in Language or Mathematics. Seminars in the area of the organization and communication of ideas, intended primarily for freshmen. These seminars may be used to satisfy a part of the requirement for General Education Area D. Prerequisite: consent of the director of honors opportunities.

251e-1 to 4 Honors Seminar in Health and Physical Education. Seminars in the area of health and physical education, intended primarily for freshmen. These seminars may be used to satisfy the requirement for General Education Area E. Prerequisite: consent of the director of honors opportunities.

299-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of University Honors Program and a faculty member of subject-matter department. Intended primarily for freshmen and sophomores. Prerequisite: consent of the director of honors opportunities.

301-1 to 9 Honors Seminar. Undergraduate honors seminar. Topics vary and will be announced by the University Honors Program each time the course is offered. Prerequisite: consent of the director of honors opportunities.

351a-1 to 9 Honors Seminar in the Sciences. Seminars in the area of the natural sciences. These seminars may be used to satisfy the requirement for General Education Area A. Prerequisite: consent of the director of honors opportunities.

351b-1 to 9 Honors Seminar in the Social Sciences. Seminars in the area of social sciences. These seminars may be used to satisfy the requirement for General Education Area B. Prerequisite: consent of the director of honors opportunities.

351c-1 to 9 Honors Seminar in the Humanities. Seminars in the area of the humanities. These seminars may be used to satisfy the requirement for General Education Area C. Prerequisite: consent of the director of honors opportunities.

351d-1 to 6 Honors Seminar in Language or Mathematics. Seminars in the area of the organization and communication of ideas. These seminars may be used to satisfy the requirement for General Education Area D. Prerequisite: consent of the director of honor opportunities.

351e-1 to 4 Honors Seminar in Health and Physical Education. Seminars in the area of health and physical education. These seminars may be used to satisfy the requirement for General Education Area E. Prerequisite: consent of the director of honors opportunities.

399-1 to 15 Honors Project. Preparation of honors paper or comparable project under joint supervision of University Honors Program and a faculty member of a subject-matter department. Prerequisite: consent of department and the director of honors opportunities.

499-3 to 9 Undergraduate Honors Thesis. Preparation of honors thesis under supervision of a committee consisting of one or more faculty members in appropriate disciplines and a representative of the University Honors Program.

University Studies (Program)

The University Studies program allows the eligible student to design a multidisciplinary, interdisciplinary, or general program of study leading to a Bachelor of Science or Bachelor of Arts degree. The Bachelor of Arts degree is granted to the graduate who has completed at least one full year of foreign language on the college level; the Bachelor of Science degree is granted to the graduate who has not completed a year of foreign language.

In order to be formally admitted to work toward a degree in University Studies, the student must meet the following criteria:

1. The student must have no more than 90 semester hours passed.
2. The student must have completed at least one full year of college course work — a minimum of 24 semester hours — with a 2.25 grade point average or higher. (For entering transfer students, the 2.25 must be for all college work previously completed; for continuing Southern Illinois University at Carbondale students, the 2.25 must be for all Southern Illinois University at Carbondale work.)

3. The student must not have exceeded any of the limitations prescribed by the program.
4. The student must have the individual program plan approved by the program director.

There are few specific requirements for the degree in University Studies other than those requirements which are University-wide baccalaureate requirements. However, there are limitations on the selection of coursework to insure that students pursue a program that matches their abilities, educational goals, and future aspirations.

Bachelor of Arts Degree

General Education Requirements	45[1]
Requirements for University Studies	75[2]
Foreign language	(4) + 4
300-400 level coursework	40[1]
Other courses as approved by the program director	31
Total	120

Bachelor of Science Degree

General Education Requirements	45[1]
Requirements for University Studies	75[2]
300-400 level coursework	40[1]
Other courses as approved by the program director	35
Total	120

[1]The student must have a minimum grade point average of 2.00 for the 40 semester hours of 300-400 level coursework. General Education courses at the 300-level count toward both the General Education requirements and toward the requirement of 40 semester hours at the 300-400 level.

[2]There are two limitations placed on course distribution:

a. The student may take no more than 40 semester hours in any academic unit *excluding* the basic 45 semester hours required in General Education — with the exception of the College of Liberal Arts where no more than 27 semester hours in the Social Sciences (excluding the nine semester hours required in Area B) and no more than 27 semester hours in the Humanities (excluding the nine semester hours required in Area C and excluding English Composition) may be taken.

b. The student may take no more than 20 semester hours in a department (or in a School within a College). General Education courses are to be included in the total *except* for the basic 45 semester hours required.

In other words, *any* General Education courses taken in addition to the minimum requirements are counted both toward the academic unit limits allowed and toward the department limits allowed.

University (Courses)

Courses

100-0 Learning Skills. Designed to provide students with the learning skills necessary to pursue college level work. Those learning skills include attitude toward university studying, setting goals, time management, classroom note taking, textbook study techniques, library skills, concentration, nmemonic techniques, and speed reading. Enrollment dependent on placement test results.

257-3 to 12 Concurrent Work Experience. Elective credit for concurrent work experience by students enrolled in the University Studies degree program. Prerequisite: consent of department. Mandatory Pass/Fail.

258-1 to 30 Work Experience. Elective credit for previous work experience by students enrolled in the University Studies degree program when credit has been established by departmental evaluation.

259-1 to 60 Occupational Education. Designated elective credit for past occupational educational experiences related to students' educational objectives. Used only when specific program credit cannot be granted.

388-1 to 18 (1 to 9 per semester) International Studies. Course work undertaken as a part of an approved University residential study program abroad. May be taken for a maximum of nine semester hours per semester and may be repeated for a maximum of 18 semester hours. Prerequisite: major department or program approval.

Vocational Education Studies (Department, Courses)

Programs are designed to prepare persons for teaching, supervisory, and leadership roles in elementary schools, secondary schools, colleges, military and industry in several areas of vocational and pre-vocational education. Students are made aware of and become knowledgeable about roles, relationships, and expertise in a variety of occupational subject areas including agriculture, business, career education, health, home economics, public service, and trades and industries. Several majors and specializations are offered. Qualified students may be accepted into the capstone program with majors in agricultural education, business education, home economics education, and occupational education. The capstone program is explained in chapter 3.

AGRICULTURAL EDUCATION (Major)

In this program a student will receive the technical and professional training needed to teach agricultural occupations in secondary schools, serve in extension, or be employed in industry. A student majoring in agricultural education may specialize in one of the following areas: agricultural production, agricultural supplies and services, agricultural mechanics, agricultural products, ornamental horticulture, agricultural resources, forestry, and other areas of agriculture in specially design curricula. Students who wish to obtain joint certification in agricultural education and special education must complete that specialization. The Capstone program is available to qualified majors in agricultural education. The Capstone program is explained in chapter 3.

Bachelor of Science Degree, College of Education or School of Agriculture

AGRICULTURAL EDUCATION MAJOR — SECONDARY TEACHING CERTIFICATE

General Education Requirements		45
GE-A 106, 115	6	
GE-B 212 and 202	6	
GE-D 101, 107, 118, 153	11	
GE-E 201 and two hours of physical activity courses	4	
Requirements for Majors in Agricultural Education		40
Agribusiness Economics	3	
Agricultural mechanization courses	3	
Agricultural Education and Mechanization 311a, b and one of the following: 364, 411, 414	9	
Animal Industries	3	
Plant and Soil Science	3	
Specialty in Agriculture and agriculture electives	19	
Professional Education Requirements		25
See Teacher Education Program, page 66.		
Electives		10
Total		120

Agricultural Education Major — Joint Certification in Agricultural Education and Special Education

A request has been made to the State Board of Education for approval for joint certification in agricultural education and special education. A student may complete an emphasis in special education by completing from six to twelve hours in special education, without satisfying joint certification requirements. Interested students should see an academic advisor.

General Education Requirements 45
GE-A 106, 115 6
GE-B 212 or 301 and 202 6
GE-D 101, 107, 118, 153 11
GE-E 201 and two hours of physical activity courses 4
Requirements for Majors in Agricultural Education 40
Agribusiness Economics 3
Agricultural mechanization courses 3
Agricultural Education and Mechanization 311a, b and one of the following: 364, 411, 414 9
Animal Industries 3
Plant and Soil Science 3
Specialty in Agriculture and agriculture electives 19
Requirements in Special Education 23-24
Special Education 400, 401 or 402 or 404, 414, 417 or 418, 419, 430, Psychology 301, Educational Psychology 412 or Psychology 431
Professional Education Requirements 31
Education 201, 301, 302, 303, 304c, 312-3, 350, 400-8, 401-8
400 and 401 must include eight hours of student teaching in agricultural education and eight hours in special education.
See Teacher Education Program, page 66.
Total 140-142

BUSINESS EDUCATION (Major)

The business education major offers specializations to prepare persons for teaching, supervisory, and leadership roles in secondary schools, private business schools, colleges, and industry in the areas of vocational and pre-vocational business education, and in-service training. Students selecting the secondary certification option may select one of the following teaching areas: office accountancy, data processing, general business/consumer education, and marketing. Students who wish to obtain joint certification in business education and special education must complete that specialization. Those selecting the non-certification specializations may select from these areas: office, accounting, data processing, marketing, and management. The Capstone program, explained in Chapter 3, is available to qualified majors in business education. Business education majors may take no more than 25% of their program in courses in business administration.

Bachelor of Science Degree, College of Education

BUSINESS EDUCATION MAJOR — SECONDARY TEACHING CERTIFICATE

General Education Requirements 45
Including GE-B 202, 211 or Economics 214, 212 or 301, GE-D 101, 117, 118, or 119, and one additional English course, GE-E 201, 2 hours of physical education activity courses
Requirements for Major in Business Education 50
Accounting 210 or 220 3
Administrative Sciences 170 or 304 3
Secretarial and Office Specialties 101a 3
Vocational Education Studies 302, 306, 310, 411, 498b 13
Preparation in one of the following business teaching areas:
Accounting
Vocational Education Studies 412
Accounting 230, 240, 321, 322, 341

Electronic Data Processing 217 or Computer Science 212
Plus either two supplemental teaching areas or one supplemental teaching area and completion of vocational program coordination requirement

Data Processing
Vocational Education Studies 412
Electronic Data Processing 102
Two of the following: Electronic Data Processing 103, 201, 204, 206, 217 or Computer Science 212
Plus either two supplemental teaching areas or one supplemental teaching area and completion of vocational program coordination requirements

General Business and Consumer Education
Vocational Education Studies 418
Administrative Sciences 350
Marketing 304
Economics 215
Finance 271 or 370
Consumer Economics and Family Management 341
Plus either two supplemental teaching areas or one supplemental teaching area and completion of vocational program coordination requirements

Marketing
Vocational Education Studies 418
Marketing 304, 305, 363, 438
Finance 271 or 370
Plus one supplemental teaching area and completion of vocational program coordination requirements

Office
Vocational Education Studies 404, 413
Secretarial and Office Specialties 101d, 106, 107, 109, 230, 233
Plus either three supplemental teaching areas or two supplemental teaching areas and completion of vocational program coordination requirements

Professional Education Requirements 25
See Teacher Education Program, page 66.

Total 120

Supplemental Teaching Areas in Business Education:

1. Accounting and Bookkeeping: Accounting 230, Vocational Education Studies 412.
2. Data Processing: Vocational Education Studies 412, Electronic Data Processing 102, one of the following: Electronic Data Processing 103, 201, 206, 217 or Computer Science 212.
3. General Business/Consumer Education: Vocational Education Studies 418 and two of the following: Consumer Economics and Family Management 340, 341, GE-B 205.
4. Business Law: Vocational Education Studies 418, Finance 271, 370.
5. Marketing: Vocational Education Studies 418, Marketing 304, 363, 438.
6. Shorthand and Transcription: Vocational Education Studies 304, 414.
7. Typewriting: Secretarial and Office Specialties 101d, Vocational Education Studies 413.

VOCATIONAL PROGRAM TEACHING REQUIREMENTS

Vocational Education Studies 472, and 473 plus the equivalent of one year of work experience from Vocational Education Studies 258 or 395.

Credit from Vocational Education Studies 258 or 259 may be used in lieu of the business education requirements, except Vocational Education Studies 412, 413, 414, and 418.

The city of Chicago has requirements that differ from those presented in this bulletin. Copies of these requirements may be obtained from the business education office, 133 Henry J. Rehn Hall.

BUSINESS EDUCATION MAJOR — JOINT CERTIFICATION IN BUSINESS EDUCATION AND SPECIAL EDUCATION

A request has been made to the State Board of Education for approval for joint certification in business education and special education. A student may complete an emphasis in special education by completing from six to twelve hours in special education, without satisfying joint certification requirements. Interested students should see an academic adviser.

General Education Requirements 45
- Including GE-B 202, 211 or Economics 214, 212 or 301, GE-D 101, 117, 118, or 119, and one additional English course, GE-E 201, 2 hours of physical education activity courses

Requirements for Major in Business Education 44
- Accounting 210 or 220 3
- Administrative Sciences 170 or 304 3
- Secretarial and Office Specialties 101a 3
- Vocational Education Studies 302, 306, 310, 411, 498b 13
- Preparation in one of the following business teaching areas:
  - Accounting
    - Vocational Education Studies 412
    - Accounting 230, 240, 321, 322, 341
    - Electronic Data Processing 217 or Computer Science 212
    - Plus one supplemental teaching area.
  - Data Processing
    - Vocational Education Studies 412
    - Electronic Data Processing 102
    - Two of the following: Electronic Data Processing 103, 201, 206, 217 or Computer Science 212
    - Plus one supplemental teaching area.
  - General Business and Consumer Education
    - Vocational Education Studies 418
    - Administrative Sciences 350
    - Marketing 304
    - Economics 215
    - Finance 271 or 370
    - Consumer Economics and Family Management 340, 341
    - Plus one supplemental teaching area.
  - Marketing
    - Vocational Education Studies 418
    - Marketing 304, 305, 363, 438
    - Finance 271 or 370
    - Plus completion of vocational program coordination requirements.

Office
Vocational Education Studies 404, 413
Secretarial and Office Specialties 101d, 106, 107, 109, 230, 233
Plus two supplemental teaching areas.

Requirements in Special Eduation 23-24
Special Education 400, 401 or 402 or 404, 414, 417 or 418, 419, 430, Psychology 301, Educational Psychology 412 or Psychology 431

Professional Education Requirements 31
Education 201, 301, 302, 303, 304b, 312-3, 350, 400-8, 401-8
400 and 401 must include eight hours of student teaching in business education and eight hours in special education.
See Teaching Education Program, page 66.

Total 143-144

BUSINESS EDUCATION MAJOR — NON-CERTIFICATION BUSINESS OCCUPATIONS TEACHING

General Education Requirements 45
Including Economics 214 or GE-B 211

Requirements for Major in Business Education 75
Accounting 220 and 230 6
Administrative Sciences 304 3
Marketing 304 3
Economics 215 3
Finance 271 3
Secretarial and Office Specialties 101a 3
Vocational Education Studies 302, 306, 310, 495b-6 or 496b-6 14
Vocational Education Studies 395, 460, 472, 473, 474, 484 20-28
Plus completion of courses in one of the following areas:
Office
Vocational Education Studies 402, 403, 404, 405, 407, 411, and 413
Secretarial and Office Specialties 101d, 107, 230, 233
Accounting
Accounting 321, 322, 331, 341, 361 or 471
Vocational Education Studies 411, 412
Electronic Data Processing 217 or Computer Science 212
Data Processing
Electronic Data Processing 102, 104, 205, and two of the following: 103, 201, 206, 217 or Computer Science 212
Vocational Education Studies 411, 412
Marketing
Finance 370
Marketing 363, 438, 401
One 3-hour marketing elective
Vocational Education Studies 411 and 418
Management
Administrative Sciences 341, 350, 385, 431
Marketing 363
Vocational Education Studies 411 and 418

Total 120

Credit from Vocational Education Studies 258 or 259 may be used in lieu of the business education requirements.

Minor

A minor in business education consists of a minimum of 20 hours. Minors are planned for each student individually by the student and the adviser.

To meet Illinois Document I certification requirements for teaching, 24 semester hours are required.

CLOTHING AND TEXTILES (Major, Courses)

Students majoring in clothing and textiles may specialize in either apparel design or retailing. A double specialization is available for students with broader interests and goals, and a special major may be planned with approval of the program director. A minor in clothing and textiles is also available.

Bachelor of Science Degree, College of Education

CLOTHING AND TEXTILES MAJOR — APPAREL DESIGN SPECIALIZATION

This specialization is intended for the student interested in professional preparation in apparel design or allied design positions in either industrial or commerical fashion businesses. The courses available to the student cover textile information, fashion design, and skills required for developing original designs into patterns and completed garments. Courses in clothing and textiles are complemented by ones in art, business, and other areas in order to provide a suitable background for various career opportunities.

General Education Requirements		45
GE-A 106	3	
GE-B 202, 211	6	
GE-C 205	3	
Requirements for Major in Clothing and Textiles with Apparel Design Specialization		70
Vocational Education Studies 336, 337, 338-5, 340, 342, 334, 345, 346, 347, 348, 439 or 449, 440, 444, 446, 448	49	
Art 100a, 110, 206 and art history	12	
A statistics course approved by the department	3	
Professional electives	6	
Choose from the following: accounting, art, chemistry, clothing and textiles, finance, interior design, journalism, marketing, psychology, or other approved courses.		
Electives		5
Total		120

CLOTHING AND TEXTILES MAJOR — RETAILING SPECIALIZATION

This specialization prepares the student for a profession in retail stores, either as buyers or department managers. Other related retailing positions are also available to students who complete the retailing specialization. The courses available to the student cover textile information, fashion merchandising, marketing and other business-related courses.

General Education Requirements		45
GE-A 106	3	
GE-B 202, 211	6	
GE-C 205	3	

Requirements for Major in Clothing and Textiles with Retailing Specialization 70
Vocational Education Studies 336, 337, 341-3, 343, 345, 346, 347, 349, 442, 445 plus 3 additional hours 34
Art 100a 3
Accounting 210 or 220 3
Administrative Sciences 301 or 304 or Psychology 320 3
Electronic Data Processing 217 or Computer Science 202 or 212 3
A statistics course approved by the department 3
Marketing 304, 363, 401 plus 3 additional hours 12
Professional electives 9
Choose from the following: chemistry, clothing and textiles, finance, interior design, journalism, marketing, psychology, or other approved courses.
Electives 5
Total 120

CLOTHING AND TEXTILES MAJOR – DOUBLE SPECIALIZATION

This double specialization prepares the student for professional positions calling for either apparel design or retailing backgrounds, and the student will also be prepared to assume professional responsibilities calling for a blend of these, for example, a business which both designs apparel and sells it to the ultimate user.

General Education Requirements 45
GE-A 106 3
GE-B 202, 211 6
GE-C 205 3
Requirements for Major in Clothing and Textiles with Double Specialization 100
Vocational Education Studies 336, 337, 338-5, 340, 341-3, 342, 343, 344, 345, 346, 347, 348, 349, 439 or 449, 440, 442, 444, 445, 446, 448 64
Accounting 210 or 221 3
Administrative Sciences 301 or 304 or Psychology 320 3
Art 100a, 110, 206, and art history 12
A statistics course approved by the department 3
Electronic Data Processing 217 or Computer Science 202 or 212 3
Marketing 304, 363, 401, plus 3 additional hours 12
Total 145

Minor

A minor in clothing and textiles is intended to provide background that will assist students in pursuing their career goals or other interests. A minor in clothing and textiles must have approval of the program coordinator. At least 16 hours of clothing and textiles courses are required as follows:

335 or 345 2-4
335, 337, or 347 6
Other clothing and textiles courses 6-8

HOME ECONOMICS EDUCATION (Major, Courses)

Programs are designed to prepare home economics teachers and home economics extension advisers with various specializations. Both general home economics

education and vocational home economics teachers are prepared. Three specializations are offered. Students who wish to obtain joint certification in home economics and special education must complete that specialization. The Capstone program is available to qualified majors in home economics education. The Capstone program is explained in chapter 3.

Bachelor of Science Degree, College of Education

HOME ECONOMICS EDUCATION MAJOR — TEACHING VOCATIONAL HOME ECONOMICS SPECIALIZATION

This program prepares students to teach consumer education, homemaking as an occupation, and occupational home economics in schools operating under the provisions of federal vocational education legislation.

General Education Requirements	45
Including GE-B 108, 202, 212 or 301; GE-C 101; GE-D 101, 117 or 118; 153, 107, GE-E 201; 2 hours of physical education activity courses	
Requirements for Major in Home Economics Education	48
Chemistry 140a	(4)
Curriculum, Instruction and Media 227, 237, 318, 327, elective course-3	15
Vocational Education Studies 338a, 340, 345	9
Consumer Economics and Family Management 320, 330, 331, 340, 350, 351	16
Food and Nutrition 100, 156, 335	8
Professional Education Requirements	33
See Teacher Education Program, page 66	25
Vocational Education Studies 320, 322, 323	8
Total	127

Credit from Vocational Education Studies 258 or 259 may be substituted for six semester hours in each of two areas (Child and Family, Clothing and Textiles, Consumer Economics and Family Management, Food and Nutrition) of the home economics requirements. There is no substitution for Child and Family 227, 237, 366, Consumer Economics and Family Management 340 or Food and Nutrition 100.

HOME ECONOMICS EDUCATION MAJOR — TEACHING VOCATIONAL HOME ECONOMICS SPECIALIZATION — JOINT CERTIFICATION IN HOME ECONOMICS EDUCATION AND SPECIAL EDUCATION

A request has been made to the State Board of Education for approval for joint certification in home economics education and special education. A student may complete an emphasis in special education by completing from six to twelve hours in special education without satisfying joint certification requirements. Interested students should see an academic adviser.

General Education Requirements	45
Including GE-B 108, 202, 212 or 301; GE-C 101; GE-D 101, 117 or 118, 153, 107; GE-E 201; 2 hours of physical education activity courses	
Requirements for Major in Home Economics Education	34
Chemistry 140a	(4)
Curriculum, Instruction and Media 227, 237	6
Consumer Economics and Family Management 331, 340, 350	9
Food and Nutrition 100, 156, 335	8
Vocational Education Studies 338a, 340, 431, 464	11

Requirements in Special Education 23-24
Special Education 400, 401 or 402 or 404, 414, 417 or 418, 419, 430, Psychology 301, Educational Psychology 412 or Psychology 431
Professional Education Requirements 39
Education 201, 301, 302, 303, 304c, 312-3, 350, 400-8, 401-8 31
400 and 401 must include eight hours of student teaching in home economics education and eight hours in special education.
See Teacher Education Program, page 66.
Vocational Education Studies 320, 322, 323 8
Total 141-142

HOME ECONOMICS EDUCATION MAJOR – EXTENSION SPECIALIZATION

This program prepares students for positions as home advisers, 4-H advisers, and with further training, extension specialists.

General Education Requirements 45
Including GE-B 108, 202, 212 or 301; GE-C 101; GE-D 101, 117 or 118, 153, 107 or GE-E 201; 2 hours of physical education activity courses
Requirements for Major in Home Economics Education 72
Chemistry 140a,b ..... (4) + 4
Curriculum Instruction and Media 227, 237, 317 9
Consumer Economics and Family Management 320, 330, 331, 340, 350, 351 16
Food and Nutrition 100, 156, 256, 335 13
Vocational Education Studies 320, 324, 325, 336, 338A, 340, 345, 431 24
Journalism 340 or substitute 3
Speech Communication 221 3
Electives 3
Total 120

HOME ECONOMICS EDUCATION MAJOR – EDUCATIONAL SERVICES SPECIALIZATION

This program prepares students for positions in agencies and businesses which provide educational services. Such tasks as developing informational materials, working with individual customers or clients, coordinating conferences and demonstrating products might be included in the job description for such positions.

General Education Requirements 45
Including GE-B 108, 202, 203, 211 or 212, GE-C 101
Requirements for Major in Home Economics Education 54
Curriculum, Instruction, and Media 227, 237 6
Consumer Economics and Family Management 331, 350, 340 9
Vocational Education Studies 320 or 119, 321, 338 or 340, 335 or 345, 384, 431, 497c 20
Restricted Electives 19
To be selected from the following:
Child and Family 337, 327
Vocational Education Studies 337, 340, 342, 343, 347
Consumer Economics and Family Management 320, 330, 480
Food and Nutrition 156, 256, 335, 356
Vocational Education Studies 302, 398c, 433, 464, 474, 490c, 494c
Electives 21
Total 120

OCCUPATIONAL EDUCATION (Major, Courses)

Programs are designed to prepare persons for teaching, supervisory, and leadership roles in schools, colleges, military, and industry. Students are made aware of and become knowledgeable about roles, relationships, and expertise in a variety of educational agencies and occupational subject areas. Six specializations are offered. Students who wish to obtain joint certification in occupational education with specialization in trades and industries and special education must complete that specialization.

Bachelor of Science Degree, College of Education

The Capstone program is available to qualified majors in occupational education. The Capstone program is explained in chapter 3.

OCCUPATIONAL EDUCATION MAJOR – TRADES AND INDUSTRIES TEACHING SPECIALIZATION, OCCUPATIONAL EMPHASIS (SECONDARY TEACHING CERTIFICATE)

Trades and industries teaching concerns specialized instruction in a wide variety of vocational-technical occupations including industrial-oriented, and other occupations. In addition to being certificated to teach in secondary high schools or vocational schools, graduates may also teach in industry, private schools and community junior colleges.

General Education Requirements	45
Including GE-A 101, 106; GE-B 212 or 301 and 202; GE-D 101, 117, 152, GE-D Mathematics; GE-E 201; 2 hours of physical education activity courses	
Requirements for Major in Occupational Education	41
Vocational Education Studies 395[1]	16
Vocational Education Studies 258 and/or 259	25
Professional Education Requirements	34
See Teacher Education Program, page 66.	25
(Must include Education 304b)	
Vocational Education Studies 460d, 462d, 466d	9
Total	120

OCCUPATIONAL EDUCATION MAJOR – TRADES AND INDUSTRIES TEACHING SPECIALIZATION, OCCUPATIONAL EMPHASIS – JOINT CERTIFICATION IN OCCUPATIONAL EDUCATION AND SPECIAL EDUCATION

A request has been made to the State Board of Education for approval for joint certification in occupational education and special education. A student may complete an emphasis in special education by completing from six to twelve hours in special education, without satisfying joint certification requirements. Interested students should see an academic adviser.

General Education Requirements	45
Including GE-A 101, 106; GE-B 202 or 301 and 202; GE-D 101, 117, 152, GE-D Mathematics; GE-E 201; 2 hours of physical education activity courses	
Requirements for Major in Occupational Education	35
Vocational Education Studies 395d[1]	16
Vocational Education Studies 258 and/or 259	19
Requirements in Special Education	23-24
Special Education 400, 401 or 402 or 404, 414, 417 or 418, 419, 430, Psychology 301, Educational Psychology 412 or Psychology 431	

Professional Education Requirements 31
Education 201, 301, 302, 303, 304, 312-3, 350, 400-8, 401-8
400 and 401 must include eight hours of student teaching in occupational education and eight hours in special education
See Teaching Education Program, page 66.

Total 134-135

OCCUPATIONAL EDUCATION MAJOR – OCCUPATIONAL TEACHING SPECIALIZATION (POST-SECONDARY TEACHING)

Occupational teaching involves instructing youth and adults in a highly skilled or technical area such as electronics, automotives, aviation, commercial art, cosmetology, or others, which require an advanced knowledge of applications in a defined line of endeavor.

General Education Requirements 45
Including GE-A 101, 106; GE-B 212 or 301 and 202; GE-D 101, 117, 152, GE-D Mathematics; GE-E 201; 2 hours of physical education activity courses
Requirements for Major in Occupational Education 75
Vocational Education Studies 258, 259, 395[1], 460d, 462d, 466, 472, 495 66
College of Education electives 9
To include 3 semester hours in courses outside the Department of Vocational Education Studies

Total 120

OCCUPATIONAL EDUCATION MAJOR – HEALTH OCCUPATIONS TEACHING SPECIALIZATION – SECONDARY TEACHING CERTIFICATE

The health occupations teaching specialization (secondary teaching) prepares persons with allied health and nursing specialty backgrounds for teaching, supervisory, and leadership roles in health occupations education in secondary schools. In addition to receiving the secondary school certification, persons completing this program are qualified to teach in vocational schools, industry, private schools, and community colleges.

General Education Requirements 45
Including GE-A 101, 106; GE-B 212 or 301 and 202; GE-D 101, 117, 152, GE-D Mathematics; GE-E 201; 2 hours of physical education activity courses
Requirements for Major in Occupational Education 41
Vocational Education Studies 395[1] 16
Vocational Education Studies 258/259 25
Professional Education Requirements 34
Education 304b required.
See Teacher Education Program, page 66 25
Vocational Education Studies 460e, 462e, 466 9

Total 120

OCCUPATIONAL EDUCATION MAJOR – HEALTH OCCUPATIONS TEACHING SPECIALIZATION – JOINT CERTIFICATION IN OCCUPATIONAL EDUCATION AND SPECIAL EDUCATION

A request has been made to the State Board of Education for approval for joint certification in occupational education and special education. A student may complete an emphasis in special education by completing from six to twelve hours in special education without satisfying joint certification requirements. Interested students should see an academic adviser.

General Education Requirements 45
Including GE-A 101, 106; GE-B 212 or 301 and 202; GE-D 101, 117, 152, GE-D Mathematics; GE-E 201; 2 hours of physical education activity courses
Requirements for Major in Occupational Education 35
Vocational Education Studies 395e[1] 16
Vocational Education Studies 258/259 19
Requirements in Special Education 23-24
Special Education 400, 401 or 402 or 404, 414, 417 or 418, 419, 430, Psychology 301, Educational Psychology 421 or Psychology 431
Professional Education Requirements 40
Education 201, 301, 302, 303, 304b, 312-3, 350, 400-8, 401-8 31
400 and 401 must include eight hours of student teaching in occupational education and eight hours in special education
Vocational Education Studies 460e, 462e, 466 9
See Teaching Education Program, page 66.
Total 143-144

OCCUPATIONAL EDUCATION MAJOR — HEALTH OCCUPATIONS TEACHING SPECIALIZATION (POST-SECONDARY TEACHING)

The health occupations teaching specialization (post-secondary teaching) prepares persons for instructing in highly skilled and technical health occupations education such as dental hygiene, medical laboratory technology, preprofessional nursing programs, radiological technology, and others which require advanced knowledge or application in a defined health field. Persons completing the post-secondary health occupations teaching specialization are qualified to teach in community colleges, private schools, and industrial settings.

General Education Requirements 45
Including GE-A 101, 106; GE-B 212 or 301 and 202; GE-D 101, 117, 152, GE-D Mathematics; GE-E 201; 2 hours of physical education activity courses
Requirements for Major in Occupational Education 75
Vocational Education Studies 395e, 460e, 466, 495e 26
Vocational Education Studies 258/259 40
College of Education electives 9
To include three semester hours in courses outside the Department of Vocational Education Studies
Total 120

[1]Students with two or more years of documented, appropriate work experience are not required to take 395.

Courses

119-1 Home Economics Careers. An introduction to career opportunities in the broad fields of home economics and related occupations.
257-1 to 30 Work Experience. Credit for on-campus work experience through a cooperative program developed between the department and the Office of Student Work and Financial Assistance. Prerequisite: consent of program coordinator. Mandatory Pass/Fail.
258-2 to 30 Occupational Experience. Credit for documented experience in a teachable occupation or family of occupations. Prerequisite: 12 hours of *C* or better at Southern Illinois University.
259-2 to 48 Occupational Subjects. Credit for documented occupational study in accredited and selected other programs. Prerequisite: 12 hours of *C* or better at Southern Illinois University.

302-3 Communications in Business. Principles and practice in written and oral business communications. Included is the development of ability to use words and correct grammatical construction in oral and written business expression; the learning of the principles of planning, organizing, writing, and summarizing effective communications; and the refinement of listening skills.

304-3 Analysis of Alternative Shorthand Systems. Development of high-level dictation and transcription skills and knowledges in one shorthand system; the learning of the theory of one or more additional shorthand systems, either alphabetic or symbolic. Prerequisite: Secretarial and Office Specialties 102d or 103d or equivalent.

306-3 Introduction to Data Processing. Emphasis on operation of keypunch machine, vocabulary development, unit record equipment, concepts of programming, fundamentals of computer mathematics and applications, and flow charting.

310-2 Introduction to Business Education. An introduction to teaching business in public and private schools, and business/industry training. Emphasis is on curriculum structures, philosophical bases, student characteristics, employment requirements, and career opportunities.

320-1 Home Economics as a Profession. A social, psychological, and philosophical interpretation of home economics in today's world. Overview of career areas and the practice of the dual role of homemaker-professional worker.

321-2 Methods of Teaching for Non-Teaching Majors. Educational principles for use in situations mostly outside of the formal classroom. Selection and organization of materials. Practice in using a variety of techniques and teaching aids.

322-4 Methods and Curriculum in Home Economics. The total home economics program. Curriculum planning for the course and the unit. Teaching methods especially suitable for home economics classes. Teaching aids and materials. Evaluation of instruction. Managing the business of the department. Possible expense for materials for teaching experiences: $5. Prerequisite: Basic professional block in education, eight semester hours.

323-3 Introduction to Home Economics Related Occupational Programs. Organization and operation of occupational home economics programs. Use of instructional materials. Supervised work experiences. Field trips. Prerequisite: Education 302.

324-4 History, Development and Principles of Extension Work. The history and philosophy of cooperative extension. Principles and practice of organizing and administering extension work in home economics. Offered alternate years. Transportation expense for field trips: approximately $5.

325-4 Field Experience. Six weeks of observing and assisting a county home economics extension adviser. Supervised experiences in various phases of extension work. Student must provide for own living and travel expenses. Prerequisite: 324.

326-2 Practicum-Home and Family Life Education. Provides pre-service home economics teachers and home economics extension advisers experiences in observing and working with families with respect to problems, needs, and values as a basis for more effective teaching.

327-3 Home Economics for Men (and Women). A survey of the areas of home economics; child care and personal, family, and community relations; economics and management of personal and family resources; food, nutrition, clothing selection and buying; financial management, consumer education; and protection. Emphasis on life skills as reflected in needs of students. Field trip and practicum experiences. Cost: $2 for supplies.

335-2 Basic Textiles. Emphasis on recognition of fabrics and weaves, suitability, care, and maintenance, especially household textiles. Credit cannot be earned for 335 after receiving credit for 345.

336-3 Survey of Clothing. Multidisciplinary overview of study of clothing. Course will include aesthetic, cultural, economic, psychological, social, and anthropological aspects.

337-3 Clothing for Consumers. Clothing needs of individual family members within the context of developmental stage, life style, and societal setting; functional and fashion-motivated needs considered; clothing budgeting. Prerequisite: 336.

338A-2 Clothing Construction — Beginning. Basic clothing construction laboratory. Beginning skills: use of machine, fabric selection and preparation, pattern alteration, garment construction.

338B-3 Clothing Construction — Intermediate. Clothing construction skills beyond 338A. Intermediate skills in fitting, construction, and pattern and fabric usage.

339-1 to 12 (1 to 6 per semester) Field Experience. Supervised learning experience in approved business or industry. Intended for majors in clothing and textiles only. Prerequisite: consent of chairperson.

340-3 Flat Patternmaking and Drafting. Fitting basic tissue of muslin and making sloper; making styles through flat pattern manipulation and drafting; testing and refining patterns to provide perfect fit. Prerequisite: 338.

341-4 (1, 3, 1, 1) Fashion Retailing Seminar. Comparison of practices drawn from students' work experiences and information from readings or resource persons. Individual and group projects. **(a)** Retail theft, **(b)** buying and buying procedures, **(c)** personnel, **(d)** introduction

to visual merchandising, especially in-store and window display. Emphasis on artistic elements and motivational strategies of displays. Prerequisite: 100 hours approved retailing experience.

342-3 Draping. Application of design principles to dress; making garment form; refining patterns draped in muslin. Garments constructed of fashion fabric. Prerequisite: 340.

343-3 Apparel Accessories. Product knowledge, levels of quality, setting points, and care of plastics, leather goods, furs, jewelry, cosmetics. Elective Pass/Fail.

344-3 Fashion Illustration. Original designs for male and female apparel and accessories using various media. Designs based on various sources of inspiration. Prerequisite: Art 110.

345-4 Textiles. Presentation of aspects of textiles having an influence on properties and performance of textile and products such as apparel and home furnishings. Characteristics of fibers, yarns, and fabrics will be discussed, and other factors such as manufacturing methods of and legal constraints on the textile industry will be mentioned. Lecture and laboratory. Prerequisite: GE-A 106.

346-3 Display and Exhibition Design. Application of design principles and use of graphics in display. Studies in two- and three- dimensional display and exhibition; model-making techniques. Incidental expenses for supplies and materials. Elective Pass/Fail.

347-3 Fashion Motivation. Psychological motivation for wearing clothing; societal functions of clothing, cultural differences in dress. Prerequisite: 336.

348-3 Tailoring. Basic principles of tailoring applied to coat or suit. Prerequisite: 338 or equivalent.

349-3 Fashion Merchandising. Functions and responsibilities of the fashion merchandiser, considering various retail establishments. Professional course for retailing majors. Prerequisite: 341 and Marketing 304.

360-15 (3, 3, 3, 3, 3) Vocational, Occupational, and Career Simulation Clusters Studies. Vocational, occupational, and careers simulation and gaming activities. Occupational orientation and exploration. Community laboratory films and other methods. Team teaching also used.

362-3 Vocational, Occupational, and Career Orientation and Exploration. Introduction to orientation and exploration activities for vocational, occupational, and career education programs at the junior high and early senior high school levels. Career development processes are examined.

363-3 Career Education. An examination of the historical, social, economic, and psychological foundations for career education. A typical career education curriculum model will be presented. Instructional materials and methods for facilitating career development will be demonstrated.

364-3 Leadership of Youth and Peer Groups. (Same as Agricultural Education and Mechanization 364.) Identification and discussion of the role of organizations, both structured and unstructured. Identification and development of qualities of leadership.

366-4 Multi-Activity Laboratory. Participation in designing instructional programs for multiple activity industrial arts laboratory or shops and performing the shop tasks. It includes such methods or approaches as project, exercises, mass production, enterprise, American industries, career orientation, world of construction, and others. Prerequisite: 15 hours shop or laboratory credits.

368-3 Construction Methods for Primary Teachers. Various media such as wood, metal, and paper. Acquainting the primary teacher with the materials, tools, and processes which students at the primary level can manipulate and use in the classroom. Laboratory.

370-3 Diversified Crafts for Teachers and Recreation Leaders. Experience in constructional activities involving the use of wood, metals, leathers, plastics, reed, raffia, clay, and other materials adaptable to the needs and interests of camp counselors and elementary school leaders. Laboratory.

384-3 Adult Education in Vocational, Occupational, and Career Education. Planning and preparing for adult education programs. Includes review of characteristics of clientele, financial support, program development.

395-1 to 24 Occupational Internship. Special educational activities are based upon required occupational skills and knowledges and are related to each student's academic program and career objective. May include independent study. Hours and credit arranged by coordinator. **(a)** Agricultural education. **(b)** Business education. **(c)** Home economics education. **(d)** Industrial education. **(e)** Health occupations education. Prerequisite: consent of coordinator and employment in a University-approved position.

398-1 to 3 Special Problems. Independent study for qualified students. **(a)** Agricultural education. **(b)** Business education. **(c)** Home economics education. **(d)** Industrial education. **(e)** Health occupations education. Prerequisite: consent of instructor.

402-3 Introduction to Office Information Systems. An introduction to the integrated office concept investigating the functions of data processing, records management, electronic mail, word processing, and reprographics.

403-3 Microform Systems. An introduction to the use of microforms in the management of information flow. Emphasis is placed on analysis of application, effectiveness, and cost of available microform systems, techniques, and equipment. Not for graduate credit.
404-3 Analysis of Office Systems. An investigation of procedures and systems used in various types of offices, including a study of work flow, the processing of words, office personnel and their responsibilities, and the role of office functions in the total business society.
405-3 Office Management. Principles of management applied office problems. Emphasis on the role of the office in business management; office organization; physical facilities and layout of office; office services, procedures, standards, and controls; records management.
407-3 Records Administration. An introduction to methods and systems of controlling, storing, retrieving, and disposing of records. Application of principles of records administration to medical, legal, educational, industrial, and governmental records. Techniques needed to design and implement an operationally efficient records management program. Prerequisite: 403.
410-2 Principles and Problems of Business Education. A study of the fundamentals of business education; its relation to business, to general education, and to vocational and career education; its history, current status, and trends; special emphasis on objectives and curriculum problems.
411-3 Curriculum and Methods in Business Education Instruction. An introduction to curriculum materials and instructional methods used in the many content areas of business education. This course is the first of a sequence of specific business education instructional methods courses. Prerequisite: 310, major or minor in business education.
412-2 Teaching Accounting and Data Processing. Specific methods and techniques to teach in the business education areas of accounting and data processing. Prerequisite: 306, 411, Accounting 220 or School of Technical Careers 120.
413-2 Teaching Keyboarding, Communication, and Office Systems. Specific methods and techniques to teach in the business education areas of keyboarding, communications, and office systems and procedures. Prerequisite: 404, 411, Secretarial and Office Specialties 101d, or equivalent.
414-2 Teaching Shorthand. Specific methods and techniques to teach shorthand in a business education curriculum. Prerequisite: 304, 411, Secretarial and Office Specialties 102d, or equivalent.
418-2 Teaching Basic Business, Consumer, and Marketing Education. Specific methods and techniques to teach basic business, consumer, and marketing education in a business education curriculum. Prerequisite: 411, GE-B 205 or Marketing 304.
428-3 Home Economics for Elementary Teachers. Identification and development of meaningful home economics related experiences appropriate for various levels of elementary curriculum. Interpretation of current vocational education legislation and trends affecting elementary programs.
431-3 Demonstration and Laboratory Techniques in Home Economics Education. Practice in planning and carrying out instructional demonstrations in home economics for youth and adults. Use of audiovisual aids and hand-outs. Procedures for laboratory and guided practice to develop psychomotor skills. Attention given to TV presentations. Possible expense for materials to use in classroom demonstrations $5 to $8.
433-3 Women and the Politics of Education. Ways of organizing to implement legislation for social needs. How to have input into decisions which affect the educational community — reimbursement, grants, funding. The need, impact, and opportunity for careers in public service as these relate to individual, family, and societal needs. Field trips.
439-3 Historic Clothing: Western Cultures. Development of clothing in western civilization to the present time. Consideration of social, economic, and esthetic factors, and technical innovations influencing clothing. Offered alternate years. Prerequisite: junior standing.
440-3 Experimental Custom Apparel Designing. Development of apparel to meet esthetic, structural, and functional needs; problem solving for exceptional proportions, rehabilitation, activity, performing arts, new technology, materials, environment. Prerequisite: 340, 342, 344.
422-3 Clothing Economics. Factors of production, distribution, and consumption influencing clothing industry; management of these factors in clothing related businesses; place of clothing industry in national and international markets. Prerequisite: GE-B 211 or Economics 214.
444-4 Mass-Market Apparel Designing. Design of a line to specifications; drafting; toiles, mass-production costs; work flow; use of industrial equipment. Field trips. Prerequisite: 340, 342, 344.
445-3 Textile Product Testing. Exposure to and experience with methods used by retailers and manufacturers of textile items to measure performance and maintain quality. Standards, sampling, and replication requirements and interpretation of results. Prerequisite: 345 or equivalent.
446-3 Professional Practices in Fashion Design. Business principles of apparel design, including systems, forms, and logistics of money and materials. Functions and respon-

sibilities of the fashion designer. Career opportunities in the fashion industry. Not for graduate credit. Prerequisite: 340, 342, 344.

448-3 Custom Tailoring. Individualizing, fitting, and contouring of male or female garment for customer from commerical pattern or from original pattern. Organization of work and time. Prerequisite: 348 or equivalent.

449-3 Historic Clothing: Non-Western Cultures. Traditional dress in non-western cultures. Aesthetics, symbolism, and uses of costume in the culture; effect of clothing on economy. Cultures studied may vary with each offering. Offered alternate years. Prerequisite: junior standing.

460-3 Occupational Analysis and Curriculum Development. The first of a two-course sequence presenting a systems approach to curriculum development and instructional methods utilized in vocational and occupational education. Includes analyzing occupations and jobs, specifying objectives, and developing curriculum. (b) Business education. (d) Industrial education. (e) Health occupations education.

462-3 Teaching Methods and Materials. The second of a two-course sequence presenting a systems approach to curriculum development and instructional methods utilized in vocational and occupational education. Concerned with instructional methods and materials unique to vocational and occupational education. (d) Industrial education. (e) Health occupations education.

463-3 Assessing Vocational Student Progress. Development and use of evaluation instruments to assess occupational student growth. Use of systems approach to course design, criterion-referenced and norm-referenced objectives, and four taxonomies of educational objectives in development of written tests, laboratory and work station performance tests, and attitude measures. Data are used for evaluation of student progress and program modification. Prerequisite: 460.

464-3 Special Needs Learners and Work Education. Theoretical and applied concepts in teaching special needs learners. Affective aspects of learning are emphasized. Curricula and teaching materials are examined and prepared. Field trips.

466-3 Principles and Philosophies of Vocational Education. Historical and philosophical foundations of vocational education. The nature and role of vocational education in preparing people for the world of work.

468-3 Education/Labor Force Linkages. Examines education/labor linkages. Particular attention given to the following areas: overcoming barriers to the linkage process; developing effective lines of communication; resource sharing; conducting joint problem solving with other agencies and individuals within the community; and jointly developing and providing programs and services.

472-3 Organizing Cooperative Vocational Education. Introduction to cooperative vocational education including history, rationale, legislative basis, and goals and objectives. Investigation into the competencies required for developing programs, public relations, and evaluation of cooperative vocational education. Introduction of student selection and management of cooperative vocational education. Fulfills three semester hours of the six required for State of Illinois certification.

473-3 Coordinating Cooperative Vocational Education. Overview of cooperative vocational education. Investigation into the competencies required for the establishment, implementation, and coordination of cooperative vocational education to include selection, and maintenance of training stations, student placement, related instruction in cooperative vocational education, and the management of cooperative vocational education programs. Fulfills the remaining three semester hours of the six required for State of Illinois certification. Prerequisite: 472.

474-3 Individualized Vocational Instruction. Study of the theory, characteristics, appropriateness, and evaluation techniques of individualized programs. Will include a review of the current state of individualized instruction in education for work programs.

478-3 Contemporary Principles and Management of IA Programs. Study of contemporary approaches to the teaching of industrial arts including objective philosophies, advantages, and disadvantages; shop or laboratory design and organization; and the management of programs in shops or laboratories. Not for graduate credit. Prerequisite: junior standing.

484-3 Adult Vocational and Technical Education. A study of adult vocational and technical education as offered in a variety of educational settings. Major topics include organization, funding, teaching, student characteristics, and evaluation. Prerequisite: consent of adviser.

486-3 (1, 1, 1) Post-Secondary Vocational-Technical Teaching. Contemporary approaches to teaching vocational-technical education in post-secondary institutions and agencies. (a) Orientation to and preparation for teaching occupations. (b) Situations and issues which arise in professional education sessions. (c) Interpersonal relations in teaching and other educational assignments. Not for graduate credit.

488-3 Initiating Vocational Student Placement and Follow-Up. Planning, implementing, and evaluating a school-based placement system for secondary and post-secondary vocational, technical, and adult education students.

489-3 Developing Vocational Student Placement and Follow-Up. Developing and using internal and external resources in a functioning placement and follow-up program. Prerequisite: 488.

490-1 to 4 Readings. Supervised reading for qualified students. May include independent study. **(a)** Agricultural education. **(b)** Business education. **(c)** Home economics education. **(d)** Industrial education. **(e)** Health occupations education. Prerequisite: consent of instructor and program coordinator.
491-1 to 5 Advanced Occupational Skills. Modern occupational practice in selected fields. For experienced professionals seeking advanced techniques in specialized areas of vocational education. **(a)** Agricultural education **(b)** Business education. **(c)** Home economics education. **(d)** Industrial education. **(e)** Health occupations education. Prerequisite: intermediate level study in the specialty.
494-1 to 4 Workshop. Study of current issues of importance to vocational, occupational, and career education teachers, supervisors, and administrators. Emphasis of each workshop will be identified in each workshop announcement. **(a)** Agricultural education. **(b)** Business education. **(c)** Home economics education. **(d)** Industrial education. **(e)** Health occupations education.
495-2 to 12 Teaching Internship. Internship teaching in vocational programs in approved centers. The intern teacher will follow the program of the supervising teacher in both regular and extra class activities. May include independent study. **(a)** Agricultural education. **(b)** Business education. **(c)** Home economics education. **(d)** Industrial education. **(e)** Health occupations education. Prerequisite: 18 months full-time equivalent of documented or nine months full-time equivalent of supervised experience or a combination.
496-2 to 12 Professional Internship. Research or curriculum development or program management at approved education or training sites. The intern will follow the program of the supervising professional in regular and related activities. Not for graduate credit. Prerequisite: 18 months full-time equivalent of documented or nine months full-time equivalent of supervised work experience or a combination.
497-2 to 6 Practicum. Applications of vocational, occupational, and career education skills and knowledge. Cooperative arrangements with corporations and professional agencies to study under specialists. **(a)** Agricultural education. **(b)** Business education. **(c)** Home economics education. **(d)** Industrial education. **(e)** Health occupations education. Prerequisite: twenty hours in specialty.
498-2 to 5 Special Problems. Assistance and guidance in the investigation and solution of vocational, occupational, or career education problems. May include independent study. **(a)** Agricultural education. **(b)** Business education. **(c)** Home economics education. **(d)** Industrial education. **(e)** Health occupations education. Prerequisite: consent of instructor and program coordinator.
510-3 Improvement of Instruction in Business Education.
518-3 Home Economics Programs in the Schools.
520-3 Trends and Issues in Home Economics Education.
521-3 Advanced Methods of Teaching Home Economics.
561-3 Research Methods.
562-3 Legislation and Organization.
564-3 Program Evaluation for Work Education.
566-3 Administration and Supervision.
568-3 Facilities Planning.
572-3 Trends and Issues in Cooperative Vocational Education.
574-3 Occupational Information.
576-6 (3, 3) Policy Implementation and Supervision.
578-3 Programs in Diverse Setting.
580-3 Characteristics of Clientele.
584-3 Curriculum Foundations for Work Education.
586-3 Adult Vocational Programs.
588-3 Performance-Based Professional Development.
590-1 to 9 Readings.
591-1 to 9 New Developments.
592-1 to 6 Recent Research.
593-1 to 3 Individual Research.
594-3 Advanced Research Methods.
595-1 to 16 Professional Internship.
598-1 to 6 Special Investigations.
599-1 to 6 Thesis.
600-1 to 36 Dissertation.
601-1 to 12 per semester Continuing Research.

Women's Studies (Minor)

A women's studies minor is interdisciplinary and designed to enrich and extend a student's major field of sharing insights gained from the study of women or women's issues. Course work can be selected to reflect individual student interests and

enhance the major by contributing knowledge, understanding, and sensitivities helpful to students in both the university and work settings.

Women's studies is an appropriate minor for many undergraduate majors as well as for students planning graduate or professional studies. For example, people's orientation toward their work may be affected by an historical understanding of the ways women have been treated by the courts, the health care professions, the educational system, employment, religion, literature, or the arts.

Because it is interdisciplinary, the women's studies minor should reflect academic work in both the arts and humanities and the natural and social sciences.

Minor

Minors must be approved by the coordinator of women's studies in order to assist students in developing a coherent program that meets their individual interests. The minor requires 18 semester hours of credit, 15 of which must be in women's studies courses, while the remaining 3 hours may be selected from a special interest or related course. Schedules of classes contain listings of relevant courses. The minor must include either 221 or 222 and 492. Students are urged to discuss and plan their minors with the coordinator of women's studies or with a faculty member who teaches women's studies courses.

Courses

221-3 The Sexes in the Modern World: The Social Science Perspective. (See Sociology 223)
260-3 Greek Civilization. (See GE-C 230)
286-3 Marriage and Family Living. (See Child and Family 227)
326-3 Women in Communications and Fine Arts. (See Communications and Fine Arts 397, Section B)
341-3 Psychology of Women. (See Psychology 333)
346-3 History of the American Family. (See History 369)
347-3 Women in American History. (See History 368)
348-3 Women in European Society 1600 to Present. (See History 324)
352-3 Images of Women in French Literature. (See French 300)
364-3 Classical Mythology. (See GE-C 330)
427-3 Women in the Visual Arts. (See Art 457)
442-4 Sociology of Gender. (See Sociology 423) Elective Pass/Fail.
447-3 Ascriptive Politics: Gender, Race, Ethnicity. (See Political Science 451)
454-3 to 6 Topics in Women's Literature. (See English 496)
456-3 Philosophical Perspectives on Women. (See Philosophy 446)
463-2 Greek Literature in Translation. (See Classics 405)
476-3 Women and the Criminal Justice System. (See Administration of Justice 460)
488-3 Women in the Home and Labor Market. (See Consumer Economics and Family Management 480)
490-1 to 6 Readings. Supervised readings in selected content areas of women's studies. Not for graduate credit. Prerequisite: consent of instructor and women's studies coordinator.
491-1 to 6 Special Topics. Concentration on a topic of interest not offered through the regular course listings. Not for graduate credit. Prerequisite: consent of instructor and women's studies coordinator.
492-3 to 6 Senior Seminar. A synthesizing experience required of seniors completing a minor in women's studies. Activity may include, but is not limited to, the preparation and presentation of a scholarly paper or the conduct of a research project. Not for graduate credit. Prerequisite: 221 or 222, senior standing, and consent of women's studies coordinator.
493-2 to 6 Individual Research. Exploration of a research project under the supervision of a faculty member having graduate faculty status. The project must result in a written research report which is filed with the coordinator of women's studies. Not for graduate credit. Prerequisite: consent of instructor and coordinator of women's studies and senior standing.
494-1 to 6 Practicum. Supervised practical experience in situations centering on women's issues, organizations, services, etc. The setting may be in one's own field of study or in the general content areas recognized in the women's studies program. Not for graduate credit. Prerequisite: consent of instructor and coordinator of women's studies.

Zoology (Department, Major, Courses)

A major in zoology is an appropriate beginning for those planning a career that

includes teaching and research in zoology, conservation, fisheries management and wildlife management, environmental monitoring, or the practice of medicine, dentistry, and veterinary science.

Students majoring in zoology are required to develop an individualized curriculum by consulting with the director of undergraduate studies in zoology and an appropriate faculty member of the department. The curriculum must include: a year of chemistry or physics, one course in mathematics beyond the College of Science requirement or a course in computer science, Biology 305 and 307, Zoology 220a,b, 300 (or equivalent, i.e., Biology 309), Zoology 482, and at least 18 additional semester hours of electives in zoology.

Courses offered in the General Education program will not be accepted as electives. A minimum of 37 semester hours of biology and zoology must be completed for the major.

Bachelor of Arts or Bachelor of Science Degree, College of Science

General Education Requirements	45[1]
Supplementary College of Science Requirements	11-13
Foreign Languages	(4) + 4
Mathematics 108 and 109 or 111	(3) + 1-3
Physical Science (Not General Education)	6[2]
Requirements for Major in Zoology	40-44[3]
Biology 305, 307	6
Zoology 220a,b, 300 (or its equivalent), 482	13
Elective zoology courses	18
Chemistry or Physics (Not General Education)	(6)+0-2[4]
A course in Mathematics (beyond Mathematics 108 and 109 or 111), or in Computer Science	3-5
Electives	18-24
Total	120

[1]The 45 hour requirement may be reduced by taking College of Science or major requirements which are approved substitutes for General Education courses.
[2]May apply toward General Education if approved substitutes are taken.
[3]Zoology requirements will satisfy biological science for the College of Science.
[4]Satisfies physical science requirements for the College of Science.

Bachelor of Science Degree, College of Education

Degree taken in the College of Education must satisfy all requirements of that college for the Bachelor of Science degree. The requirements for the major in zoology are the same in both colleges, except that to meet teacher certification requirements a minor in botany is required. Curriculum, Instruction, and Media 468 is also required. College of Education professional education and other certification requirements may be found in the section of this catalog titled Curriculum, Instruction, and Media. See Teacher Education Program, page 65.

Minor

A minor in zoology consists of 20 hours, including 220a,b, and 482. Electives from zoology and the following areas may be used to complete the 20-hour minimum requirement: Biology 305, 306, 307, 308, and 309; but no General Education courses can be included.

Courses

212-2 Birding. Bird watching for pleasure. Consideration of identification, songs and ecology of birds, information on bird organization, equipment, and techniques. Credit may not be used toward a major in zoology. Two lectures per week. Offered Fall term. Cost of $5 to $10 may be incurred by student.

214-3 Human Heredity. Principles of heredity as related to humans, with emphasis on the effects of environment on the biological inheritance.

220-8 (4, 4) Diversity of Animal Life. Diversity and its taxonomic treatment in animals, emphasizing structure, function, life cycles, behavior, and phylogeny. **(a)** Invertebrates, **(b)** Vertebrates. Two lectures and two 2-hour laboratories per week. Need not be taken in a,b sequence. Fall, Spring, Summer. Prerequisite: GE-A 118 or strong background in high school biology recommended.

258-2 to 4 Work Experience. Credit for prior experience directly related to a student's specialty in the field of zoology. The student must petition the department and provide documentation as may be necessary to assess and approve such credit. Available for elective credit only.

300-4 Vertebrate Embryology. Main features of embryonic and fetal development from fish to humans. Two lectures and two 2-hour laboratories per week. Offered Fall and Spring terms. Prerequisite: 220b.

305-2 Genetics Laboratory. Experimental methods in applying basic principles of genetics. Monogenic and digenic inheritance, sex-linkage, gene interaction, linkage and chromosome mapping, mutation, artificial and natural selection, gene frequencies, and genetic drift. Two 2-hour laboratories per week. Cost of $5 may be incurred by student. Offered Spring term. Prerequisite: Biology 305, or concurrent enrollment.

309-3 Elementary Cell Biology. Introduction to structure, function, and natural history of major cell types. Two lectures and one 2-hour laboratory per week. Offered Spring term. Prerequisite: consent of instructor.

313-2 Evolution. Principles and processes of the evolution of living things including people.

314-3 Biology of Human Populations. Examines in detail three aspects of the increasing human population: its biological causes, its effects on the environment, and biological approaches for solving it. Three lectures per week. Offered Fall and Spring terms.

316-3 Insect Pests and Their Control. Classical and economic entomology including morphology, physiology, and taxonomy. Life history, damage, and control of principal injurious insects will be discussed. Two lectures and one 2-hour laboratory per week. Credit may not be used toward a major in zoology. Offered Fall term. Prerequisite: GE-A 118 or equivalent.

318-5 Comparative Vertebrate Anatomy. The structure of vertebrate organ systems. Two lectures and three 2-hour laboratories per week. Cost of $5 to $10 may be incurred by student. Offered Fall and Spring terms. Prerequisite: 220b.

351-4 Ecological Methods. Basic ecological field techniques for analysis of community structure and functional relationships. Two 4-hour laboratories per week. Cost of field trips may be $5 to $25 per student. Offered Spring term. Prerequisite: 220a,b and Biology 307.

375-2 Ecology of Surface Mining. Environmental characteristics, techniques of evaluating, plans for utilization and reclamation of surface mined areas. One lecture and one 2-hour laboratory or field trip per week. Credit may not be used toward a major in zoology. Cost of $5 to $10 may be incurred by student. Offered Spring term.

393-1 to 3 Individual Research. Research on zoological problems. Credit may not be used toward a minor in zoology. Some cost may be borne by the student. Offered Fall, Spring, and Summer terms. Prerequisite: minimum of 3.00 GPA (*A* is 4.00), senior standing, and approval by the proposed faculty supervisor.

400-3 Cell Biology of Development. Cellular molecular mechanisms of embryogenesis and differentiation. Examination of the cell as a component of interacting tissues constituting the developing organism. Prerequisite: consent of instructor, 300 or advanced standing in Biology.

402-3 Natural History of Invertebrates. Introduction to ecology, intraspecies communication and interspecies relationships of invertebrate animals. Recommended for teacher preparation programs. Two lectures and one 2-hour laboratory per week. Cost of $10 to $20 may be incurred by student. Offered Fall term. Prerequisite: 220a.

403-3 Natural History of Vertebrates. Life histories, adaptations, and identification of fish, amphibians, reptiles, birds, and mammals, emphasizing local species. Recommended for teacher preparation programs. One lecture and two 2-hour laboratories per week. Offered Spring semester. Prerequisite: 220b or consent of instructor.

405-3 Systematic Zoology. Theory and procedure of classification; population taxonomy; variation and its analysis; rules of zoological nomenclature; taxonomic publication. Three one-hour lecture-discussion meetings per week. Prerequisite: 220a, b and consent of instructor.

406-3 Protozoology. Taxonomy, cytology, reproduction, and physiology of unicellular animals. Laboratory methods for culture and study. One lecture and two 2-hour laboratories per week. Cost of $5 may be incurred by student. Offered Fall term. Prerequisite: 220a.

407-4 Parasitology. Principles, collection, identification, morphology, life histories, and control measures. Two lectures and two 2-hour laboratories per week. Cost of $5 may be incurred by student. Offered Spring term. Prerequisite: 220a.

408-3 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. One lecture and two 2-hour laboratories per week. Cost of $5 may be incurred by student. Offered Fall term. Prerequisite: 220b.

409-4 Vertebrate Histology. Microscopic structure of organs and tissues with emphasis

on mammalian material. Two lectures and two 2-hour laboratories per week. Cost of $5 may be incurred by student. Offered Spring term. Prerequisite: 10 to 12 semester hours of biological science.

410-6 (3, 3) Vertebrate Paleontology. History of vertebrate animals in terms of their morphological change, geological succession, and ecological relationships. **(a)** Fossil fishes, amphibians, reptiles and birds. **(b)** Fossil mammals. Two lectures and one 2-hour laboratory per week. Cost of $5 may be incurred by student. Offered **(a)** Fall; **(b)** Spring term. Prerequisite: 220b.

413-6 (3, 3) The Invertebrates. **(a)** Structure, phylogeny, and habitats of the lower invertebrates through lophophorates and deuterostomes except echinoderms. **(b)** Structure, phylogeny, and habitats of the higher invertebrates including echinoderms, molluscs, annelids, and arthropods. Three 2-hour laboratories per week. Cost of $5 may be incurred by the student. Offered Spring term, **(a)** in alternate even years; **(b)** alternate odd years. Cost of $5 may be incurred by student. Prerequisite: 220a.

414-4 Freshwater Invertebrates. Taxonomic groups, identification, distribution, and habitats of the North American freshwater invertebrate fauna. Two lectures, two 2-hour laboratories per week. Offered Fall term. Cost of $15 to $20 may be incurred by student for field trips. Prerequisite: 220a.

415-3 Limnology. Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures per week and one 4-hour laboratory alternate weeks. Cost of $15 to $20 may be incurred by student. Offered Fall term. Prerequisite: 220a.

421-4 Histological Techniques. Methods of preparing animal tissue for microscopic study and learn theories of staining and histochemistry. One lecture and two 3-hour laboratories per week. Cost of $15 may be incurred by student. Offered Fall term. Prerequisite: 10 semester hours of biological science.

426-3 Comparative Endocrinology. Comparison of mechanisms influencing hormone release, hormone biosynthesis, and the effects of hormones on target tissues. Includes ablation and histology of glands and chemical and bio-assays with vertebrates and invertebrates. Two lectures and one 2-hour laboratory per week. Cost of $5 to $10 may be incurred by student. Offered Spring term. Prerequisite: consent of instuctor.

460-2 Upland Game Birds. Identification, life history, ecology, and management. One lecture and one 2-hour laboratory per week; there will be three or four Saturday field trips. Cost of field trips up to $25 per student. Prerequisite: 220b or consent of instructor.

461-3 Mammalogy. Taxonomic groups, identification, and natural history of mammals. One hour lecture and two 2-hour laboratories per week. Cost of $10 may be incurred by student. Offered Fall term. Prerequisite: 220b.

462-3 Waterfowl. Identification, life history, ecology, and management. Two lectures and one 2-hour laboratory per week; there will be three or four Saturday field trips. Cost of field trips up to $25 per student. Prerequisite: 220b or consent of instructor.

463-3 Game Mammals. Natural history and management. Two lectures and one 2-hour laboratory per week. Cost of $5 may be incurred by student. Prerequisite: 220b or consent of instructor.

464-3 Wildlife Administration and Policy. Responsibilities of private, state, and federal natural resources management agencies. Legal and political processes in areas of wildlife and natural resources. Three lectures per week. Offered Spring term. Prerequisite: consent of instructor.

465-3 Ichthyology. Taxonomic groups, identification, and natural history of fishes. Two lectures and one 2-hour laboratory per week. Cost of $10 may be incurred by student. Offered Spring term. Prerequisite: 220b.

466-3 Fish Management. Sampling, age and growth, dynamics, habitat improvement, manipulation of fish populations, and management of freshwater and marine fish stock. Two lectures per week and one 4-hour laboratory alternate weeks. Cost of field trips up to $25 per student. Offered Fall term. Prerequisite: 10 hours of biological science.

467-3 Ornithology. Classfication and recognition of birds and the study of their songs, nests, migratory habits, and other behavior. One lecture and one 4-hour laboratory per week. Cost of field trips may be up to $20 per student. Offered Spring term. Prerequisite: 220b.

468-6 (3, 3) Wildlife Biology. Basic concepts and techniques for managing wildlife populations and their habitats. A basic ecology course is desirable as background for this course. **(a)** Principles. Three 1-hour lectures per week. **(b)** Techniques. Two 3-hour laboratory sessions per week, four of which may be field trips on Saturdays. Cost of field trips up to $25 per student may be incurred. Offered Fall term. Prerequisite: 10 semester hours of biological science; concurrent enrollment in 468a and 468b desirable.

471-3 Entomology. Structure, classification, and life histories of insects. One lecture and two 2-hour laboratories per week. Offered Fall term. Cost up to $20 may be incurred by student for field trips. Prerequisite: 220a.

473-3 Aquatic Entomology. Structure, classification, and biology of aquatic insects. One lecture and two 2-hour laboratories per week. Cost up to $20 may be incurred by student. Offered Spring term. Prerequisite: 220a.

478-3 Animal Behavior. Biological basis of the behavior of animals. Two lectures and one 2-hour laboratory per week. Offered Fall semester. Prerequisite: one year of biological science or permission of instructor.
479-2 to 5 Concepts in Animal Behavior. Terms and concepts relevant to the study of animal behavior. Guided self-instructional format, with two 1-hour and one 3-hour period scheduled weekly, primarily as question-answer and evaluation sessions. Offered alternate Spring term (odd years). Prerequisite: one year of biological science or permission of instructor.
480-2 to 5 Research Methods in Animal Behavior. Skills relevant to doing research in animal behavior. Guided self-instructional format, with two 3-hour periods scheduled weekly, primarily as question-answer and evaluation sessions. Cost of up to $25 may be incurred by student. Offered alternate Spring semester (even years). Prerequisite: at least two hours of *B* work in 478 or 479, or permission of instructor.
482-1 Zoology Seminar for Seniors. Classical and contemporary topics in zoology. This requirement will normally be met by participating in the regular meeting of the seminar. In lieu of seminar attendance and with consent of departmental chairperson, the student may elect to prepare and give an oral presentation at a special seminar on an agreed upon research topic. One meeting per week. Offered Fall, Spring, Summer terms. Not for graduate credit. Prerequisite: senior standing or 24 hours of life sciences completed. Mandatory Pass/Fail.
496-2 to 4 Zoology Field Studies. A trip of four to eight weeks to acquaint students with animals in various environments and with methods of field study, collection, and preservation. Cost of $25 may be incurred by the student. Offered Fall, Spring, Summer terms. Prerequisite: consent of department.
508-2 Helminthology.
512-2 Animal Geography.
514-3 Advanced Entomology.
520-3 Advanced Invertebrates.
521-3 Advanced Limnology.
525-3 Cytology.
530-3 Wildlife Diseases.
540-3 Factors in Animal Reproduction.
542-3 Osteology.
566-3 Fish Culture.
567-1 to 4 Techniques in Fish Culture and Fish Management.
573-3 Physiological Ecology.
577-2 Population Ecology.
578-2 Population Genetics.
580-3 Advanced Taxonomy.
581-2 Zoological Literature.
582-1 to 4 (1, 1, 1, 1) Graduate Zoology Seminars.
583-1 Teaching Zoology in College
585-36 (3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3) Seminar.
593-1 to 12 Individual Research.
598-1 to 12 Research Paper.
599-1 to 12 Research and Thesis.
600-1 to 32 Research and Dissertation.
601-1 to 12 per semester Continuing Research.

5 Student Services

Campus Life

Office of Student Development

The Office of Student Development, located on the third floor of the Student Center, sponsors a wide array of programs, activities, and services designed to provide students with opportunities that enhance and complement the traditional classroom learning experience.

Student Orientation Programs. The Office of Student Development provides a comprehensive orientation program for new students and their parents. These programs are designed to assist students in making a smooth transition into the University community and to introduce both new students and their parents to the University's vast resources, services, and programs. Orientation sessions are offered prior to the beginning of each semester and on new student advisement and registration days. Upperclassmen, known as student life advisers, serve as orientation peer advisers to help the new student learn about the campus and its services. The Student Orientation Committee is available year round to assist students. For more information or assistance, telephone 453-5714.

It's MAGIC. Project MAGIC (Maximize Academic Growth in College) is a general advisement program for freshman students. The purpose of the program is to help freshman students derive the greatest benefit from the people, programs, and facilities at the University. This is done by providing interested freshmen with the opportunity to develop a friendly and helpful relationship with a member of the University faculty or staff, a mentor, who can assist the new freshman in developing career and academic goals, in learning how to maximize the educational opportunities available at the University, and in becoming acclimated to college life. To enroll in project MAGIC, contact the Office of Student Development, 453-5714.

Southern Illinois University at Carbondale Parents Association. Open to all parents of students at the University, the parents association provides opportunities for parents to become better informed and more positively involved with their student's education and university experiences. The nominal annual family membership fee entitles parents to a quarterly newsletter, special event programs, and a number of University and community discounts. Membership applications are available from the Office of Student Development.

Registered Student Organizations. The professional staff of the Office of Student Development works with the more than 350 registered student organizations on

the campus in the areas of fiscal management, organizational matters, and University policies and procedures. The office also provides a variety of services designed especially for the organizations: membership referrals, student organization directories, leadership development workshops, student organizational procedural manuals and leadership training modules, equipment checkout service, copy duplicating service, notary public service, mail box service, and programming resource library. Included among the organizations are student governmental groups, coordinating councils, public interest groups, fraternities and sororities, publication and media groups, scholastic and professional honoraries, departmental clubs, special interest goups, religious organizations, and sports and recreation clubs. Interested students should contact the Office of Student Development or attend an activities fair to learn more about student organizations.

Black Affairs Council. Black Affairs Council serves as the coordinating and governmental body for the 16 Black student organizations on campus. It assumes a major responsibility for programming social, cultural, and educational programs for Black students at the University. The offices are located on the third floor of the Student Center, telephone 453-2534.

Inter-Greek Council. Inter-Greek Council is the activity coordinating council for the University 13 social fraternities and 8 social sororities. Sub-councils include the Inter-Fraternity Council, the Panhellenic Council and the Pan-Hellenic Council. The Greek system promotes leadership, scholarship, and service, offering students an opportunity to enhance their University experience. Rush, or membership recruitment, is sponsored at the beginning of fall and spring semesters, as well as at designated times throughout the year. For additional information, contact the Inter-Greek Council, telephone 453-5714.

Mobilization of Volunteer Efforts. Mobilization of Volunteer Effort promotes student involvement and leadership in the University and community. It sponsors leadership development programs for student organizations and serves as a clearinghouse to coordinate student volunteer interests with the needs of over 75 service organizations on campus, in Carbondale, and in communities within a six-county area. The outreach programs provide opportunities for students to gain experience in nearly every field of interest: day care, senior citizens, recreation, handicapped, mental health, youth, tutorial, corrections, crisis, and intervention. The United Way Campaign and the Red Cross Blood Drive are examples of special projects. Special events include activities such as Mobilization of Volunteer Effort Week, community development projects, and charity benefits. Mobilization of Volunteer Effort also serves as a referral and coordinating agent for student organizations which promote service and need assistance with a project or special event. Mobilization of Volunteer Effort is located in the Office of Student Development, telephone 453-5714.

Credit for Programming. In cooperation with various academic units, the Office of Student Development provides opportunities for students to receive academic credit for their participation in student activities and student organizations. Opportunities available include leadership development courses for fraternity and sorority members, community service-learning programs for Mobilization of Volunteer Effort workers, leadership development seminars for orientation student life advisers, and undergraduate and graduate internships.

Rainbow's End Preschool. Rainbow's End is a comprehensive day care, child

development center designed to serve children, ages 6 weeks to 8 years, of University students, faculty, and staff members. The center, which is staffed by qualified professionals, is licensed by the Illinois Department of Children and Family Services and is a participant in the State of Illinois Food Reimbursement Program. Rainbow's End is open from 7:30 a.m. to 5:30 p.m. each day the University is in session. Tuition and fees are assessed according to the number of hours for which the child is enrolled and are based upon a sliding parental income scale. Rainbow's End is located at Lakeland School, 925 South Giant City Road in Carbondale, telephone 529-2271.

Student Center

The Student Center is the community center of the University for all students, faculty, administration, alumni, and guests. It is not just a building — it is an organization and a program which together represent a well-considered plan for the community life of the University.

The Student Center offers students many work and cocurricular opportunities. Approximately three hundred students annually have job opportunities in the Student Center and the center receives sizeable student work aid to supplement work opportunities. There are also academic credit and work-related opportunities in conjunction with Commercial Graphics-Design, and the Departments of Higher Education and Recreation. In addition, through Student Center and Student Programming Council programs, nonmajors may become actively involved in theater, dance, and other performing arts activities.

As a community center it performs four important missions. It supplies support services which complement the academic mission of the university through the bookstore, food service, information services, and meeting facilities. It is part of the educational program of the University and serves as a laboratory of citizenship and leadership through participation in its various boards and committees that provide a campus-wide social, cultural, and recreational program. It is an extension of the classroom which allows practicum students, graduate assistants and interns the opportunity to develop on-the-job expertise in their fields of learning. It serves as a unifying force in the university, cultivating interactions on a common ground between students, faculty, staff, alumni, and friends. It is a focal point to which alumni and students can relate when returning to campus.

The Student Center covers almost eight acres of floor space and is open approximately 16 hours a day, seven days a week. The University Bookstore sells new and used textbooks and school and personal supplies. A variety of food services are offered in the cafeteria, snack bar, deli, restaurant, grocery and bakery and through concessions and catering service. Other facilities and services are automated post office, automated banking, event ticket sales, check cashing, Student Health Assessment Center, Western Union money order receiving station, bowling lanes, billiard room, craft shop, art exhibit and display case areas, television and video lounges, and general lounges for study and relaxation.

Other available facilities include ballrooms, an auditorium, and several private meeting and dining rooms. Offices in the Student Center are the Alumni Office, the Student Development Office, the University Programming Office, and student organization and student government offices.

SIU Arena

The SIU Arena is designed to accommodate athletic events, meetings, musical programs, stage performances, and similar activities that demand a large indoor participant area or facilities to accommodate large audiences. The facilities and staff are available to help meet the requirements of the educational program as

well as the intercollegiate athletics program, Area Services, the Division of Continuing Education, and student activities. The SIU Arena also provides a popular entertainment series to help fulfill the educational, cultural, social, and entertainment needs of the University community.

Shryock Auditorium

Shryock Auditorium, located in the center of the historic old campus section of the University, is the premiere performing arts center of southern Illinois. Constructed in 1918, the building was completely renovated in 1973. The facility has 1,200 seats, a dressing room complex capable of accommodating up to 70 performers, and the latest in sound and light control systems.

Each year the auditorium's Celebrity Series features some of the finest Broadway musicals and plays, orchestras, dance companies, and grand opera. In addition to the fine arts, Shryock Auditorium frequently presents pop, folk, and rock concerts in a setting of comfort and acoustical perfection. The facility is also available for rental by any student organization for large group meetings, conferences, and special events.

Campus Communications Media

SIUC BROADCASTING SERVICE

The SIUC Broadcasting Service provides instructional and public broadcasting through the PBS affiliated WSIU-TV and the NRP affiliated WSIU-FM. Students are provided employment opportunities in a wide range of broadcast related experiences in radio and television through the assistance of the Student Work Program. Both stations actively encourage student unpaid volunteer assistance in broadcast areas of personal interest. Students are permitted to work with the stations' modern equipment in the creation of radio and television programming. Prior broadcast related experience or radio-television coursework is required for most of the paid student positions. Unpaid volunteer work primarily in the areas of news and sports reporting, radio program production, and television production as technical crewmembers.

The stations also provide support for Telpro, a SIUC student radio and television production company supervised by the Department of Radio-Television with professional assistance from the Broadcasting Service staff and facilities. The twofold purpose of the organization is to produce programs for possible broadcast and to provide students with valuable practical experience on studio equipment. A variety of programs is produced each semester, including music, drama, and instructional shows. Through weekly meetings, guest speakers, tours, training sessions, and actual production work, the members gain knowledge of and competence in their areas of interest in the broadcast industry.

NEWSPAPER

The *Daily Egyptian,* campus newspaper, is published Mondays through Fridays when the University is in session and serves as a morning daily newspaper for the University and surrounding community. The publication also serves as a laboratory newspaper for students in the School of Journalism, produced under professional supervision, using student editors and staff. About 90 students work at news gathering, editing and layout, production, advertising and distribution. The combined campus and off-campus circulation is about 26,000. Students do not have to be enrolled in journalism to be employed in the newspaper departments of news, photography, camera, paste-up, typesetting, advertising, business, press, and circulation. The newspaper is published and printed in a complete modernly equipped electronic plant and facilities to produce a 40-page web-offset daily newspaper.

Intercollegiate Athletics for Men

Southern Illinois University at Carbondale has one of the finest all-around men's athletic programs in the country, fielding varsity teams in ten sports: football and cross country in the fall; basketball, indoor track, gymnastics and swimming in the winter; and baseball, outdoor track, tennis, and golf in the spring.

During the school year, the Salukis are favored to win conference championships in cross country, indoor and outdoor track, baseball, and possibly once again, win the All-Sports trophy for the Missouri Valley Conference. Also the Saluki football and basketball teams should be among the strongest in the Missouri Valley Conference.

Intercollegiate Athletics for Women

The 1983-1984 sports year was the second for the women's teams as part of the Gateway Collegiate Athletic Conference (GCAC). The Salukis again held their own in competition with league schools, winning GCAC titles in golf and swimming and the Gateway Invitational in gymnastics.

Southern Illinois University at Carbondale fell a single win short of forcing a playoff for the conference championship in basketball and wound up in a tie for second with Illinois State University. In field hockey, the Salukis finished as runners-up in the final conference standings, while copping third in track and field and tennis after going unbeaten in the latter sport against GCAC foes during the regular season for the second year in a row.

In swimming, Southern Illinois University at Carbondale capped an unbeaten dual season by tying for seventh at the NCAA Division I Nationals. Ten swimmers earned All American honors and seven Saluki women participated in the Olympic Trials.

For the second consecutive season, the women's basketball team compiled 22 victories which included a string of eleven straight wins. A first place finish in the Dial Classic in Pullman, Washinton, was another season highlight.

Southern Illinois Univeristy at Carbondale female athletes were as outstanding in the classroom as on the playing fields. The Salukis had more athletes honored for academic excellence by the Gateway Conference than any other school.

Intramural-Recreational Sports

The Office of Intramural-Recreational Sports, located in the Student Recreation Center, provides campus-wide, year-round programs to meet the needs of individuals and groups wishing to participate in sport or leisure time activities. Program opportunities are available at the Student Recreation Center, various campus playfields, tennis courts, and Lake-on-the-Campus.

Intramural sports offers organized tournaments and special events for individual and team competition. Recreational sports programs include informal recreational opportunities, recreation for special populations, sport clubs, family programs, fitness workshops, and aquatic activities at the 40-acre Lake-on-the-Campus.

The Student Recreation Center houses a gymnasium, an Olympic-size swimming pool, eight handball/racquetball courts, a martial arts room, equipment check-out areas, a dance studio, a weight room, saunas in each locker room, and a climbing wall.

Recreational equipment is available for indoor and outdoor use. Base camp provides equipment rental for backpacking and camping at a nominal fee.

Leisure exploration service offers information, workshops, and leisure counseling to assist students with awareness of recreational opportunities and leisure alternatives on campus and throughout Southern Illinois.

For detailed information concerning programs and facilities, contact the Office of Intramural-Recreational Sports, 536-5531.

Campus Services

Student Health Program

Southern Illinois University at Carbondale provides an extensive health benefits plan through the Student Health Program. Student input to the plan is provided through the Student Health Policy Board. Interested students may contact the chairperson of the Student Health Policy Board 453-3311.

AREAS OF SERVICE

The Student Health Program offers the following interrelated programs.

Wellness Center. The Wellness Center offers programs and services to help students achieve optimal health and to skillfully administer self-care when ill. Individual and small group counseling, workshops, and seminars in the Student Center, residence halls, and Student Recreation Center, classroom presentations and special programs are offered throughout the year. Specific services provided through the Wellness Center are as follows:

- Stress Management Training
- Weight Loss Counseling
- Nutrition Assessment Information and Counseling
- Stop Smoking Counseling
- Yoga, Meditation and Tai Chi Classes
- Self Care Advice for Athletic Injuries
- Patient Education
- Birth Control Information and Counseling
- Pregnancy Counseling
- Sexuality Information
- Alcohol and Drug Information and Counseling
- Wellness Library
- Wellness Outreach Program — Student Center
- Residence Hall Programs and Public Presentations
- Practicum and Internship Training

On-Campus Outpatient Care. This care or primary care is the same as that offered by private general physicians. The Health Service is staffed by the equivalent of six full-time physicians, a full-time psychiatrist, support staff, and student workers. The student benefits include all routine office care and a wide range of diagnostic tests, including x-ray and laboratory procedures. The benefit does not cover pharmacy charges and may include a small front door fee. To be seen at the clinic, call for an appointment 536-2391. Walk in services are available for emergency care.

On-Campus Infirmary. On-campus infirmary is provided in a ten-bed inpatient setting on the second floor of the Health Service. Intermediate care is provided for illness when medical and skilled nursing care is required but the student is not in need of hospitalization. Admission to the infirmary must be authorized by a Health Service physician or by an emergency room physician during the hours when the Health Service is closed. Fee-paying students are entitled to room and board, diagnostic x-ray and laboratory procedures, and physician visits with minimal cost.

Dental Services. The Student Emergency Dental Service provides dental care to resolve emergency dental disorders. There is a small front door fee. For appointments or information, call 549-5651.

LOCATION OF SERVICES

On-campus services of the Student Health Program are available at the following locations. The outpatient clinic, infirmary, and x-ray and laboratory services are located in 115 Greek Row, 453-3311, or 536-2391 for appointments. The pharmacy, wellness center, and administration office are located at 112 Greek Row, 453-3311, or 536-4441 for wellness center. The student emergency dental program is located at the School of Technical Careers building, Room 25D, 536-2421.

Off-campus services for after hour emergency care are available at Memorial Hospital of Carbondale at 404 West Main Street, 549-0721.

ELIGIBILITY

Any student who is enrolled at Southern Illinois University at Carbondale and has paid the student medical benefit fee is eligible for services. If a refund has been issued for parts of the fee, as explained below, the student is still eligible for service in the areas not refunded. Eligibility for the program extends from the first day of the enrollment period for which fees have been paid to two weeks after the last day of that semester. However, students are covered through all break periods when enrollment is continuous from semester to semester. Dependents of students or staff members of the University are not eligible for Student Health Program benefits. Optional coverages are available as follows: summer plan — available to students not enrolled at Southern Illinois Univeristy at Carbondale during summer session; dependent plan — family plan for dependents of students; major medical plan — to increase overall maximum limit on coverage; maternity plan — for female students; continuing coverage for graduates — a plan to continue coverage for graduating student. These optional coverages are available through an insurance agency. For information on these plans, call 453-3311.

FEES

A $75 student medical benefit fee is assessed for fall and spring semesters, and a $45 fee for summer session.

The student medical benefit fee is distributed to the programs listed below. A student who receives a refund of any portion of the fee is not eligible for the benefits of that program but would continue to be eligible for benefits of any programs for which the fees have been paid.

Student Wellness Resource Center
On-Campus Outpatient Program
Infirmary On-Campus
Specialty Care
Hospitalization, Memorial Hospital of Carbondale
Emergency Services, Memorial Hospital of Carbondale
Emergency Services, Jackson County Ambulance Service
Out-of-the-Area Benefits
Student Emergency Dental Service
Accidental Death and Dismemberment Benefit

Students who carry their own medical insurance or are covered under their parents' policy may be eligible for a refund of portions of the student medical benefit fee. Refunds of the fee are made on the basis of comparable or duplicate coverage for each area of service. Students who think they may qualify for a refund may apply no later than the end of the third week of each semester by contacting the administration office — insurance section of the Student Health Program. When applying, students should provide a copy of their insurance policy. The administration office — insurance section is located in Room 118 of 112 Small Group Housing, 453-3311.

The limits of the Student Health Program benefits are (1) overall maximum of

$20,000 per illness or injury and (2) $300 for the specialty care benefit per illness or injury.

For additional information on benefits and specific details of the student insurance coverage, please call 453-3311. The brochure entitled *Searching for Health* is available upon request.

CONFIDENTIALITY OF INFORMATION

All visits to any division of the Student Health Programs are confidential. Medical information may be released when authorized by the student. Medical information may also be released without authorization from the student to a court when subpeonaed, to the University legal counsel when the university is being sued and the medical information would be pertinent, and to the public health department as required by law when a student is suffering from a reportable communicable disease. In addition, cases involving firearms and criminal offenses must be reported to the police.

Women's Services

The purpose of Women's Services, a component of the Counseling Center, is to maximize the opportunities and experiences of women attending Southern Illinois University at Carbondale. One of the most important functions of the office is to facilitate personal growth that can result in assisting women in recognizing and developing their potential for success both during and after college. Women's Services include the following components. 1. The re-entry program assists re-entry women in their transition back into the University. A special orientation session focused on the special needs and concerns of the non-traditional student is offered each semester. Child care information and an emergency locator system is available for students with children. Other services for this population include an on-going re-entry support group, brown bag lunches in Woody Hall B246, and financial aid information, as well as individual consultations for women needing support or assistance in dealing with personal, family, educational, or vocational concerns. 2. The campus safety program which is funded by the student activities fee, is coordinated through Women's Services. This program includes self-defense classes; rape and sexual assault awareness workshops; dorm raps, and class discussions related to safety issues. Information regarding night safety van and station wagon, which provide free transportation to campus locations, and Women's Transit, which provides free transportation to women who live off campus and are traveling to or from an educational activity is also available. These transportation services, as well as the Brightway Path, are monitored by the campus safety representative. 3. Outreach programming encompasses a variety of activities. Workshops and discussions addressing pertinent topics of interest to women are offered on a regular basis. A newsletter, *Women in Transition,* is published three to four times a semester with the purpose of informing the University community of timely issues relevant to women today, such as health care, safety, careers, and similar topics. Staff members are also available to consult, give information, and refer women with specific concerns to appropriate services. Counseling services are available on a short term basis for women desiring assistance with difficulties they may be experiencing in the University environment or at home. Structured groups are offered each semester to speak to issues relevent to women's lives, such as divorce support, assertiveness training, sexuality, eating disorders, etc. 4. Library services make available many books and articles relevant to women's issues which are not found elsewhere on campus. These materials are provided to assist both male and female students in obtaining valid information for both personal and educational endeavors. 5. Consultation activities with other University staff and units that are involved with women in the University and community are provided as needed. 6. A clearinghouse for

resources and referral information of pertinent programming for women is also maintained and is available upon request.

Women's Services is located in Woody Hall B244, 453-3655.

Career Planning and Placement Center

The Career Planning and Placement center provides assistance to students preparing for entry into the working world. Placement consultants are available to assist students and alumni with all aspects of the job search including planning, resume writing, interviewing techniques, letters of application, general information about career opportunities in their field, and specific facts about positions taken by recent SIUC graduates in that major area of study. The Career Planning and Placement Center is contacted annually by over 500 recruiters, representing businesses, government agencies, schools, and service organizations. Lifetime credential service is available to all students at the Career Planning and Placement Center, and alumni are encouraged to inform the center of their plans and avail themselves of the available services. Students may establish a file containing their resume and letters of recommendation, which will be sent upon request to any employer seeking to fill a vacancy or to any graduate school of the student's choice.

The Internship Support System is administered by Career Planning and Placement Center. The system functions as a clearinghouse for professional level internship information in business, industry, and government. Internships acquired generally consist of paid work experience during summers or contracting periods as specified by respective employers. Course credit for internships should be arranged through the student's major department. Assistance in obtaining internships is offered to students in all academic majors. Interested students should attend orientation sessions which are offered during the first six weeks of the fall term at Career Planning and Placement Center.

Career Counseling

Career counseling is a unit charged specifically with helping students resolve career or choice of major conflicts by providing direct access to a staff of professionally trained counselors. Students who have not chosen a major, or who wish to examine work values and assess their abilities, can talk with professional career counselors on a one-to-one basis. They will be assisted in clarifying their ideas about themselves and in identifying possible occupational alternatives. The career counselors also administer and interpret tests and surveys to determine an individual's aptitude, interest, achievement, and personality factors. A career information library is maintained by Career Counseling and provides students with printed and taped materials about career fields, specific job opportunities, and job search techniques. Students may engage in computerized career exploration by using CASIE (Computer Assisted Self Investigation and Exploration), a career decision making program that helps in career exploration through individual interaction with an Apple II computer. The center is located in B204 Woody Hall, 536-2091.

Testing Services

Testing services offers GED and admission tests required for undergraduate and graduate admission. Credit by examination, local proficiency, and the national CLEP and PEP programs are available with required preregistration. Many brochures also provide helpful sample tests allowing candidates to become familiar with test content and emphasis. Certification, licensure, and competency programs as required by state and professional associations are also offered any candidate as an area service.

Counseling Center

The Counseling Center is staffed with professional psychologists and counselors qualified to assist students with personal development and resolution of problems. Personal problems, relationship adjustment difficulties, family conflict, and sex role awareness development are areas of frequent concern to students. Both group and individual counseling are provided within an atmosphere of confidentiality and trust. In addition, personal development group programs are available to assist students in such areas as social skill development, assertiveness, managing anger, eating behaviors, and others. Call 453-5371 for information or an appointment. The center is located in A302 Woody Hall.

Services to Students with Disabilities

The University maintains a strong commitment to make all services, programs, and activities equally available to students with disabilities. Disabled students are integrated into regular programs and services and special services are provided through the Specialized Disabled Student Services Office and other departments in order that this student population may obtain the maximum academic, social, and cultural benefits within the University community. Available services and programs include pre-admission information, pre-enrollment planning, orientation and mobility training, special transportation, special recreational activities, career counseling and placement services, proctoring academic examinations, special materials and equipment for visually impaired students and learning disabled students, reader recruitment and referral, recruitment and referral of personal attendants, provision of interpreters and notetakers for hearing impaired students, wheelchair repair, special parking, liaison with academic departments and other offices, and liaison with agencies such as vocational rehabilitation and the Veterans Administration.

The campus is quite accessible and usable by students who use wheelchairs, and by those who are semi-ambulatory, visually handicapped, hearing impaired, or otherwise disabled. The University Housing Office provides modified housing in the Thompson Point Residential Area and in the family housing areas.

Persons with disabilities apply and are considered for admission in the same manner as other persons. The nature or severity of disability is not considered in the admission determination. Persons with disabilities interested in attending Southern Illinois University at Carbondale are encouraged to visit the campus in order to discuss programs and services and to tour the campus. Disabled prospective students are also encouraged to formally apply for admission as far in advance as possible to ensure sufficient time for planning support services after being admitted but before the starting date of the semester.

Any further information may be obtained by writing to the Office of Admissions or the Specialized Disabled Student Services Office. The Specialized Disabled Student Services Office may be reached by calling (Area Code 618) 453-5738. This number provides opportunity for regular voice communication as well as a teletypewriter for communication by and with the deaf.

Office of the University Ombudsman

The Office of the University Ombudsman assures that the University provides an orderly, reasoned response to students, faculty, and staff regarding its operations. By facilitating communication between individuals and officials of the University and between subgroups within the University community, the Office of the University Ombudsman aids in the expeditious settlement of many large and small problems. The office thus prevents most of the problems brought to its attention from remaining unresolved or from escalating into formal grievances.

Typical concerns brought to the office have ranged from academic, financial, and housing-related problems to concerns with various University services and

employment. Still other requests were for assistance with interpersonal conflicts involving other members of the University. The type of assistance provided has varied as much as the subject matter of inquiries and complaints. Aid has included helping persons locate important information that bears on their status, assisting with the preparation of responses and appeals to appropriate persons, and intervening as mediator in order to obtain an informal settlement of disputed issues.

The Office of the University Ombudsman maintains up-to-date information files on University policies and has access to all University records and personnel. Contact with the office and records made of them are confidential.

The Office of the University Ombudsman is located in C302 Woody Hall. Office hours are 8-5, Monday through Friday.

Clinical Center

The Clinical Center is staffed by professionally trained faculty and by supervised student diagnosticians, therapists, and counselors. It provides diagnostic and treatment services to faculty, staff, University students, and other individuals in the community.

Services include diagnostic assessment of psychological, speech, hearing, reading, and general education problems. Therapy services encompass various forms of counseling and behavior modification, social casework, speech and hearing therapies, physical therapy, and educational remediation.

Alumni Services

Alumni Services serves as a liaison between the University and over 80,000 alumni.

It conducts an extensive program of activities of mutual interest to the University constituents and alumni. Students are assisted directly with student loans, scholarships, awards, and summer jobs through the Student Work and Financial Assistance Office. The office also coordinates the Student Alumni Board, a volunteer student organization of students serving students through a variety of activities. We invite your participation. Contact the Alumni Office.

University Museum

The University Museum serves the campus community and surrounding area through its active exhibit program and in its cooperative ventures with other academic units to improve the quality of instruction.

The exhibits housed in Faner Hall, C wing, are designed to give viewers an authentic glimpse of the area's past. Temporary exhibits are displayed in both Faner Hall and in Mitchell Gallery located in Quigley Hall and include a series of graduate student thesis presentations, faculty art, and photography, as well as exhibits from the permanent collections and special national and international exhibits designed around a particular theme. In addition to these formal exhibits, many permanent collection objects are displayed at several other campus locations.

The University Museum also serves students in more specific ways, by providing on-the-job training, courses in museum studies, and opportunity for creating and installing practicum exhibits of art, history, and science. Through these avenues, students are able to draw on the extensive collections which include approximately 5,000 works of art, and thousands of ethnographic items from many areas of the world.

The University Museum provides a community service through guided tours, lecture programs, a loan program, exhibits in public places and works with many area groups to provide meaningful learning experiences.

International Education

The Office of International Education promotes the international dimensions of

instructional, research, and service activities of the University. The office encourages the student body and faculty to explore and develop international interests, provides support for international research, coordinates international technical assistance projects, coordinates international cultural programs for the University and the broader community, advises students from the United States about overseas opportunities, and publicizes international grant programs for graduate students and faculty.

The office also provides a wide range of services and programs for international students and faculty. These services and programs can be divided into three categories: legal/contractual, educative, and supportive.

Legal/Contractual services include the financial clearance process for admission, advisement about U.S. immigration matters and certifications of enrollment and expenses for foreign governments and sponsoring agencies.

Educative services and programs include orientation, advisement of foreign student associations, publication of a monthly newsletter, the *International Dateline,* operation of the Foreign Speakers' Bureau, and assistance with coordination of the International Festival and other cultural activities.

Supportive services include pre-admission correspondence, initial arrival assistance, assistance in conjuction with University offices and community agencies, and assistance and advisement about personal matters.

A number of community volunteers render assistance to the services and programs provided by the Office of International Education. They are especially helpful during orientation periods, when they meet arriving students and assist them in getting settled in the Carbondale community. They also help throughout the year by assisting the Foreign Speakers' Bureau and coordinating a host family program, a hospitality program, and a number of other activities. These community volunteers operate as an international friends club and they can be contacted through the Office of International Education.

6 Faculty

Accountancy (College of Business and Administration)

Anderson, Donald T., Assistant Professor, Ph.D., Texas A & M University, 1980.
Barron, Mary Noel, Associate Professor, *Emerita*, C.P.A., M.B.A., Indiana University of Michigan, 1946.
Basi, Bartholomew A., Professor and *Chairperson*, C.P.A., J.D., D.B.A., Indiana University, 1971.
Burger, Clifford R., Professor, *Emeritus*, C.P.A., M.S., Indiana State University, 1947.
Eriksen, Douglas C., Associate Professor, C.P.A., C.M.A., Ph.D., University of Missouri/Columbia, 1968.
Figlewicz, Raymond E., Instructor, C.P.A., M.B.A., Bradley University, 1976.
Joy, David, Assistant Professor, Ph.D., University of Nebraska, 1982.
Karnes, Allan, Instructor, C.P.A., M.A., Ball State University, 1977.
Kennett, Danny, Assistant Professor, Ph.D., Mississippi State University, 1983.
Lumbattis, Cathy, Visiting Instructor, C.P.A., M.B.A., Southern Illinois University at Edwardsville, 1975.
Masoner, Michael, Associate Professor, C.P.A., Ph.D., University of Minnesota, 1975.
Neal, Phillip G., Assistant Professor, C.P.A., M.B.A., J.D., Southern Illinois University at Carbondale, 1977.
Ogden, Susie, Associate Professor, *Emerita*, A.M., University of Illinois, 1931.
Rivers, Richard A., Assistant Professor, C.P.A., D.B.A., Kent State University, 1976.
Schmidlein, Edward J., Jr., Professor, *Emeritus*, C.P.A., Ph.D., New York University, 1953.
Swick, Ralph D., Professor, *Emeritus*, C.P.A., D.B.A., Indiana University, 1954.
Tucker, Marvin W., Professor, Ph.D., University of Alabama, 1966.
Wright, Roland M., C.P.A., Ph.D., University of Iowa, 1962.

Administrative Sciences (College of Business and Administration)

Bateman, David N., Professor, Ph.D., Southern Illinois University, 1970.
Bedwell, R. Ralph, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1969.
Bussom, Robert S., Associate Professor, Ph.D., Ohio State University, 1973.
Fohr, John M., Professor, *Emeritus*, Ed.D., Michigan State University, 1959.
Gardner, William L., Assistant Professor, D.B.A., Florida State University 1984.
Gutteridge, Thomas G., Professor, Ph.D., Purdue University,1971.
Jauch, Lawrence R., Professor, Ph.D., University of Missouri-Columbia, 1973.
Kraft, Kenneth L., Assistant Professor, D.B.A., University of Maryland, 1982.
Larson, Lars L., Associate Professor, Ph.D., University of Illinois, 1971.
Martin, Thomas N., Jr., Associate Professor, Ph.D., University of Iowa, 1977.
Peters, Lawrence H., Associate Professor, Ph.D., Purdue University, 1975.
Ramaprasad, Arkalgud, Assistant Professor, Ph.D., University of Pittsburgh, 1980.
Rehn, Henry J., Professor, *Emeritus*, Ph.D., University of Chicago, 1930.
Schermerhorn, John R., Professor, Ph.D., Northwestern University, 1974.
Scott, John W., Professor, *Emeritus*, Ph.D., University of Chicago, 1930.
Sekaran, Uma, Associate Professor, Ph.D., University of California-Los Angeles, 1977.
Snodgrass, Coral P., Assistant Professor, Ph.D., University of Pittsburgh, 1984.
Szewczak, Edward J., Assistant Professor, Ph.D., University of Pittsburgh, 1984.
Troutt, Marvin, Assistant Professor, Ph.D., University of Illinois at Chicago Circle, 1975.
Vicars, William M., Associate Professor, Ph.D., Southern Illinois University, 1969.

Westberg, William C., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1948.
White, Gregory P., Associate Professor, Ph.D., University of Cincinnati, 1976.
Wilson, Harold K., Assistant Professor, D.B.A., University of Colorado, 1972.

Advanced Technical Studies (School of Technical Careers)

Adams, Deborah K., Visiting Instructor/Administrative Assistant, M.A., Southern Illinois University, 1983.
Alden, Elaine F., Associate Professor, Ph.D., University of Pittsburgh, 1971.
Bowman, Terry S., Assistant Professor, M.A., Webster College, 1979.
Broker, Rodney, Academic Adviser, M.A., University of Alabama, 1976.
Brooks, Thomas M., Professor, Ph.D., Pennsylvania State University, 1961.
Cude, Brenda J., Assistant Professor, Ph.D., Purdue University, 1978.
Dallman, Murnice, Associate Professor, *Emeritus*, M.S., Southern Illinois University, 1959.
Eggers, Stephen Charles, Visiting Assistant Professor, M.B.A., Southern Illinois University, 1978.
Falkenberry, William A., Academic Adviser, M.S., Southern Illinois University, 1980.
Hertz, Vivienne, Associate Professor, Communications, Ph.D., Southern Illinois University, 1980.
Horton, John B., Visiting Assistant Professor, M.Ed., Clemson University, 1972.
Laedtke, Ralph, Visiting Assistant Professor, M.A., Webster College, 1977.
Lee, Lynda L., Visiting Assistant Professor, M.A., Webster College, 1979.
McDougle, Larry G., Professor, Ph.D., University of Toledo, 1971.
Merritt, E. Hollis, Assistant Dean, Ph.D., Indiana University, 1975.
Moore, Mary Ann, Visiting Assistant Professor, M.Ed., Georgia State University, 1969.
NewMyer, David, Assistant Professor, M.S., Northwestern University, 1974.
Nidiffer, Richard W., Visiting Assistant Professor, M.A., Webster University,
Novick, Jehiel, Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University, 1970.
Quintenz, Constance, Academic Adviser, B.S., Southern Illinois University, 1975.
Reeder, Ronald C., Visiting Assistant Professor, M.S., in Ed., Southern Illinois University, 1971.
Richard, Harold, Associate Professor, Ed.D., Pennsylvania State University, 1976.
Robb, James A., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1974.
Skelton, John, Visiting Assistant Professor, Ph.D., Southern Illinois University, 1983.
Slaney, Fiona, Assistant Professor, Ph.D., Ohio State University, 1972.
Soderstrom, Ruth, Academic Adviser, *Emeritus*, M.S., New York University, 1939.
Stein, Stuart B., Visiting Assistant Professor, M.S., Southern Illinois University, 1977.
Sutton, John R., Associate Professor, Ph.D., Southern Illinois University, 1977.
Svec, Christine L., Research Project Specialist, M.S., Southern Illinois University, 1975.
Tregoning, Ruby, Academic Adviser, M.S., Southern Illinois University, 1976.
Vitello, Elaine, Associate Professor, Ph.D., Southern Illinois University, 1977.
Walker, Rosemary, Assistant Professor, Ph.D., Purdue University, 1978.
Walton, Gary, Visiting Assistant Professor, M.A., Webster College,

Aerospace Studies

Causey, Robert J., Adjunct Professor.
Dewan, Edward W., Adjunct Instructor.
Hall, Jacqueline M., Adjunct Instructor.
Leal, Samuel D., Adjunct Instructor.
Linn, Dennis L., Adjunct Assistant Professor.
Smith, William E., Adjunct Assistant Professor.
VanRossum, Charles F., Adjunct Assistant Professor.

Agribusiness Economics (School of Agriculture)

Beaulieu, Jeffrey, Assistant Professor, B.A., Loyola University, 1975, Iowa State University.
Beck, Roger, Assistant Professor, Ph.D., Pennsylvania State University, 1977.
Eberle, Phillip, Assistant Professor, Ph.D., Iowa State University, 1983.
Herr, William McD., Professor Ph.D., Cornell University, 1954.
Keepper, Wendell E., Professor, *Emeritus*, Ph.D., Cornell University, 1938.

Kraft, Steven E., Associate Professor, Ph.D., Cornell University, 1980.
Solverson, Lyle, Associate Professor, Ph.D., University of Wisconsin, 1967.
Wills, Walter J., Professor, *Emeritus,* Ph.D., University of Illinois, 1952.

Agriculture Education and Mechanization

(School of Agriculture)

Benton, Ralph A., Professor, *Emeritus,* Ph.D., University of Illinois, 1955.
Doerr, William A., Assistant Professor, Ph.D., Southern Illinois University, 1973.
Legacy, James, Associate Professor, Ph.D., Cornell University, 1976.
Patterson, Richard J., Assistant Professor, M.S., Michigan State University, 1969.
Reneau, Fred W., Associate Professor, Ed.D., Virginia Tech, 1979.
Stitt, Thomas R., Professor, Ph.D., Ohio State University, 1967.
Wolff, Robert L., Professor, Ph.D., Louisiana State University, 1971.
Wood, Eugene S., Professor, *Emeritus,* Ed.D., University of Missouri, 1958.

Allied Health and Public Services (School of Technical Careers)

Adams, Jerry David, Adjunct Instructor, Mortuary Science, A.A., Southern Illinois University.
Adams, Vickie S., Adjunct Instructor, Allied Health Careers Specialties, ASRT.
Adler, Andrew, Adjunct Instructor, Allied Health Careers Specialties, CRTT.
Ahlf, Renee L., Assistant Professor, Dental Hygiene, B.S., Southern Illinois University at Carbondale, 1975.
Aikens, William, Adjunct Instructor, Mortuary Science.
Airsman, Terry Earl, Adjunct Instructor, Mortuary Science, A.A., Southern Illinois University.
Angelis, Jane, Assistant Instructor, Allied Health Careers Specialties, M.S., Rider College, 1980.
Aukamp, Donna L., Ajunct Instructor, Allied Health Careers Specialties, ASRT.
Bachus, Judy, Adjunct Instructor, Allied Health Careers Specialties, CRTT.
Baril, Raymond J., Adjunct Instructor, Mortuary Science.
Basler, Doris, Adjunct Instructor, Nursing, M.S.N.
Beaver, Shirley, Assistant Professor, Dental Hygiene, M.S., University of Iowa, 1971.
Beltz, Ronda, Instructor, Dental Hygiene, B.S., Southern Illinois University, 1981.
Bhate, Dharmashi, Adjunct Associate Professor, Allied Health Careers Specialties, M.D.
Bishop, Michael Lewis, Adjunct Instructor, Allied Health Careers Specialties, A.A.S., Lincoln Land Community College, 1976.
Bishop, Rodney, Adjunct Instructor, Allied Health Careers Specialties.
Bledig, Alice, Adjunct Instructor, Nursing, M.S.N., University of Evansville, 1979.
Bollman, Jill, Adjunct Instructor, Allied Health Careers Specialties.
Branson, Bonnie, Assistant Professor, Dental Hygiene, M.S., Southern Illinois University, 1983.
Brintliner, Dan, Adjunct Instructor, Mortuary Science.
Brookins, Howard B., Adjunct Instructor, Mortuary Science, Worsham College of Mortuary Science, 1967.
Bryan, Beverly Sue, Adjunct Instructor, Dental Hygiene.
Caron, Philip Louis, Adjunct Associate Professor, Dental Hygiene, D.D.S., Georgetown University, 1971.
Carter, Fred, Adjunct Instructor, Allied Health Careers Specialties, R.R.T.
Champion, Darrell E., Adjunct Instructor, Allied Health Careers Specialties, A.A.S., Lexington Technical Institute, 1974.
Cheatum, Janet L., Instructor, Physical Therapist Assistant, B.S., Southern Illinois University, 1980.
Counsell, Lee A., Adjunct Associate Professor, Dental Hygiene, M.P.H., University of Michigan, 1967.
Cunningham, Jimmie C., Adjunct Instructor, Allied Health Careers Specialties, A.A.S., Jefferson Community College, 1976.
Dale, Lynn, Adjunct Associate Professor, Allied Health Careers Specialties, M.D.
Dees, Susyn, Assistant Professor, Allied Health Careers Specialties, ASRT, M.S., Southern Illinois University, 1983.
Dolwick, Karen, Adjunct Instructor, Dental Hygiene, RDH.
Donithan, Monav, Adjunct Instructor, Nursing, B.S.N., University of Evansville, 1978.

Dugger, Bettie, Adjunct Instructor, Dental Hygiene, A.A., Southern Illinois University, 1974.
Elliott, James R., Associate Professor, Dental Hygiene, D.D.S., University of Tennessee, 1953; M.S., Ohio State College of Dentistry, 1962.
Ellis, Betty B., Adjunct Instructor, Allied Health Careers Specialties, R.N., Jewish Hospital, 1949.
Enterman, Cynthia Jo, Assistant Professor, Dental Hygiene, M.S., Southern Illinois University, 1980.
Etherton, Edward E., Adjunct Instructor, Allied Health Careers Specialties.
Fager, Prosper, Adjunct Instructor, Allied Health Careers Specialties, R.R.T.
Fulton, George, Adjunct Instructor, Mortuary Science.
Gallegly, Judith C., Adjunct Instructor, Allied Health Careers Specialties, B.S., Southern Illinois University, 1980.
Gooden, Regina T., Adjunct Instructor, Allied Health Careers Specialties, R.R.T., 1976.
Gottsman, Vikki, Assistant Professor, Dental Hygiene, M.S. Washington University, 1980.
Green, Rita L., Visiting Instructor, Dental Hygiene, A.A., Southern Illinois University, 1966.
Greenwood, Terry, Adjunct Instructor, Mortuary Science.
Griffith, David, Adjunct Instructor, Allied Health Careers Specialties, R.T.
Having, Karen, Adjunct Instructor, Allied Health Careers Specialties, R.T.
Hayduk, Jeannine, Adjunct Instructor, Nursing.
Hees, Alice Jane, Assistant Professor, Nursing, R.N., M.S., University of Colorado, 1960.
Henderson, Thomas, Adjunct Instructor, Mortuary Science.
Herr, Robert Charles, Adjunct Instructor, Mortuary Science, A.A., Southern Illinois University, 1965.
Hertz, Donald G., Associate Professor, Mortuary Science and Funeral Service, Ed.M., University of Oklahoma, 1953.
Hicks, Barbara, Adjunct Instructor, Nursing. B.S.N.
Hillebrenner, Lynda, Instructor, Allied Health Careers Specialties, B.A., University of Arizona, 1974.
Hillman, Robert V., Instructor, Allied Health Careers Specialties.
Huffman, William Nyle, Adjunct Instructor, Mortuary Science, M.S., Southern Illinois University, 1948.
Hughes, Larry, Adjunct Instructor, Mortuary Science, A.A., Southern Illinois University, 1966.
Ijams, Kayleonne, Assistant Professor, Dental Technology, M.A., Southern Illinois University, 1980.
Jensen, Catherine, Assistant Professor, Dental Hygiene, M.A., Morehead State University, 1980.
Jensen, Steven, Assistant Professor, Allied Health Careers Specialties, M.S.H.Ed., Morehead State University, 1979.
Johnson, Charles, Adjunct Instructor, Mortuary Science.
Jones, Patricia Ann, Adjunct Instructor, Allied Health Careers Specialties, A.A.S., Southern Illinois University, 1980.
Just, David, Assistant Professor, Allied Health Careers Specialties, M.Ed., University of Illinois, 1979.
Kelso, James Ellis, Adjunct Instructor, Allied Health Careers Specialties, A.S.R.T., 1962.
Kerr, Larry J., Adjunct Instructor, Allied Health Careers Specialties, R.R.T., 1978.
King, Jacquelyn, Adjunct Instructor, Nursing, R.N., M.S.N., Northern Illinois University, 1975.
Knapp, Wayne, Adjunct Instructor, Mortuary Science.
Kuberski, Roger J., Visiting Instructor, Allied Health Careers Specialties, R.N., C.R.T.T., University of Chicago, 1976.
Laake, Dennis J., Assistant Professor, Dental Technology, M.S. Ed., Southern Illinois University, 1973.
Lainfiesta, Paula, Adjunct Instructor, Nursing, B.S.N.
Lane, Michael, Adjunct Instructor, Allied Health Careers Specialties.
Leix, Patricia Elaine, Adjunct Instructor, Allied Health Careers Specialties, A.S., 1979.
Lipe, Saundra K., Adjunct Instructor, Nursing, R.N., M.S.N., University of Evansville, 1981.
Long, Bruce, Adjunct Instructor, Allied Health Careers Specialties.
Lugenbeel, Archie, Associate Professor, Allied Health Careers Specialties, Ph.D., Southern Illinois University, 1983.
Marlow, Christine, Adjunct Instructor, Allied Health Careers Specialties.
McCluskie, Michael, Adjunct Instructor, Allied Health Careers Specialties.
McMurry, William, Visiting Associate Professor, Dental Hygiene, D.D.S., University of Missouri at Kansas City, 1950.
Meister, John F., Adjunct Instructor, Allied Health Careers Specialties, Biology, Southern Illinois University.

Miller, Sandra A., Adjunct Instructor, Allied Health Careers Specialties, A.R.T., 1974.
Moberly, Michael, Assistant Professor, Law Enforcement, M.A., Indiana University, 1981.
Mohr, Alice Klump, Adjunct Instructor, Allied Health Careers Specialties.
Moore, Stephen R., Adjunct Instructor, Allied Health Careers Specialties, R.M.T., 1980.
Morgan, Frederic L., Associate Professor and *Director*, Allied Health and Public Services Division, Ed.D., Ball State University, 1969.
Morgan, Stephen E., Adjunct Instructor, Mortuary Science, A.A., Southern Illinois University, 1973.
Musgrave, Betty, Assistant Instructor, Allied Health Careers Specialties, M.S.,
Nelson, Dianne E., Adjunct Instructor, Nursing, B.S.N., University of Iowa, 1977.
Ness, James, Assistant Professor, Law Enforcement, M.S., Southern Illinois University, 1978.
Nichols, Alexis D., Adjunct Instructor, Allied Health Careers Specialties, A.S.R.T., 1974.
Nolen, Frederick D., Adjunct Associate Professor, Dental Hygiene.
Okita, Ted Y., Associate Professor, Physical Therapist Assistant, M.A., Northwestern University, 1964.
Owens, William, Adjunct Instructor, Mortuary Science.
Pace, John, Adjunct Instructor, Allied Health Careers Specialties, R.R.T.
Pape, Carolyn D., Assistant Professor, Physical Therapist Assistant, M.S., Southern Illinois University, 1983.
Parker, Raymond, Adjunct Instructor, Mortuary Science.
Patchett, Barbara, Adjunct Instructor, Nursing, R.N., M.S.N., University of Evansville, 1974.
Paulk, Marilyn, Assistant Professor, Dental Hygiene, B.S., Southern Illinois University, 1975.
Pearson, Stanley, Assistant Professor, Allied Health Careers Specialties, B.S., Central Michigan University, 1970.
Pillatsch, Craig, Adjunct Instructor, Mortuary Science.
Pirmann, Peter, Adjunct Associate Professor, Dental Hygiene, D.D.M.
Poston, George H., Associate Professor, Mortuary Science and Funeral Service, M.S., Southern Illinois University, 1977.
Pyatt, Richard, Adjunct Instructor, Mortuary Science.
Ragsdale, Michael, Adjunct Instructor, Allied Health Careers Specialties, R.R.T.
Rahe, Douglas, Adjunct Instructor, Allied Health Careers Specialties, R.R.T.
Rhodes, Steven, Adjunct Instructor, Allied Health Careers Specialties, R.R.T, RN.
Russell, Lee Gentry, Adjunct Instructor, Mortuary Science, Indiana College of Mortuary Science, 1955.
Sack, Gregory, Adjunct Instructor, Allied Health Careers Specialties, R.R.T.
Sanders, Jacquelyn, Assistant Instructor, Allied Health Careers Specialties, M.A., Southern Illinois University, 1983.
Schnirring, Richard, Adjunct Instructor, Allied Health Careers Specialties, R.R.T., C.R.T.T., B.A., Sangamon State University, 1980.
Schroll, Frederick, Adjunct Instructor, Mortuary Science.
Scott, Gerald, Adjunct Instructor, Allied Health Careers Specialties.
Settle, Brian, Adjunct Instructor, Allied Health Careers Specialties, B.S., Eastern Illinois University, 1978.
Spencer, Christine, Adjunct Instructor, Nursing. B.S.N.
Staab, George J., Jr., Adjunct Instructor, Mortuary Science, Worsham College of Mortuary Science, 1973.
Szekely, Rosanne, Assistant Professor, Allied Health Careers Specialties, B.S., Quinnipiac College, 1983.
Tate, David, Adjunct Instructor, Allied Health Careers Specialties.
Tiebout, Leigh, Lecturer, Dental Technology, B.S., Southern Illinois University, 1982.
Tillis, Willette, Adjunct Instructor, Allied Health Careers Specialties.
Troutt, Eileen, Visiting Instructor, Allied Health Careers Specialties, M.S., University of Illinois, 1975.
Waks, Dennis Stanford, Lecturer, Correctional Services and Law Enforcement, L.L.M., University of Missouri at Kansas City, 1975.
Waleskowski, Peter M., Adjunct Instructor, Allied Health Careers Specialties.
Wayman, Gayla, Adjunct Instructor, Nursing.
Weber, Kent, Adjunct Instructor, Allied Health Careers Specialties.
Westphal, Dwight, Assistant Professor, Dental Laboratory Technology, B.S., Southern Illinois University, 1977.
Whitmore, Robert, Adjunct Instructor, Mortuary Science.
Wikoff, Don T., Adjunct Instructor, Mortuary Science, Worsham College of Embalming, 1934.

Wikoff, Forest G., Jr., Adjunct Instructor, Mortuary Science, B.S., Millikin University, 1954.
Wilson, Robert A., Adjunct Instructor, Mortuary Science, Kentucky School of Mortuary Science, 1962.
Wimmer, Carl, Adjunct Instructor, Allied Health Careers Specialties, CRNA.
Wingerter, J. Alvalyne, Adjunct Instructor, Allied Health Specialties.
Winings, John R., Assistant Professor, Dental Laboratory Technology, M.A., Governors State University, 1972.
Youssef, Tawfik, Adjunct Associate Professor, Allied Health Careers Specialties, M.D.
Ziegler, Walter, Adjunct Instructor, Allied Health Careers Specialties.

Animal Industries (School of Agriculture)

Arthur, Robert D., Associate Professor, Ph.D., University of Missouri, 1970.
Goodman, Bill L., Professor, Ph.D., Ohio State University, 1959.
Hausler, Carl L., Associate Professor, Ph.D., Purdue University, 1970.
Hinners, Scott W., Professor, *Emeritus*, Ph.D., University of Illinois, 1958.
Kammlade, W.G., Jr., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1951.
King, Sheryl S., Assistant Professor, Ph.D., University at California at Davis, 1984.
Kroening, Gilbert H., Professor, Ph.D., Cornell University, 1965.
Lee, D. Dixon, Jr., Associate Professor, Ph.D., North Carolina State University, 1970.
Olson, Howard H., Professor, Ph.D., University of Minnesota, 1952.
Reed, Alex, Professor, *Emeritus*, Ph.D., University of Illinois, 1953.
Strack, Louis E., Associate Professor, D.V.M., University of Illinois, 1961.
Woody, H. Dee., Associate Professor, Ph.D., Michigan State University, 1978.
Young, Anthony W., Professor and *Chairperson*, Ph.D., University of Kentucky, 1969.

Anthropology (College of Liberal Arts)

Bender, M. Lionel, Professor and *Chairperson*, Ph.D., University of Texas at Austin, 1968.
Braun, David P., Associate Professor, Ph.D., University of Michigan, 1977.
Butler, Brian M., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1977.
Corruccini, Robert S., Associate Professor, Ph.D., University of California at Berkeley, 1975.
Dark, Philip J.C., Professor, *Emeritus*, Ph.D., Yale University, 1954.
Ford, Susan M., Assistant Professor, Ph.D., University of Pittsburgh, 1980.
Gumerman, George J., Professor, Ph.D., University of Arizona, 1969.
Handler, Jerome S., Professor, Ph.D., Brandeis University, 1965.
Jefferies, Richard W., Adjunct Assistant Professor, Ph.D., University of Georgia, 1978.
Kelley, J. Charles, Professor, *Emeritus*, Ph.D., Harvard University, 1948.
Kurin, Richard, Assistant Professor, Ph.D., University of Chicago, 1981.
MacLachlan, Bruce B., Associate Professor, Ph.D., University of Chicago, 1962.
Maring, Ester G., Assistant Professor, Ph.D., Indiana University, 1969.
Maring, Joel M., Associate Professor, Ph.D., Indiana University, 1967.
Muller, Jon D., Associate Professor, Ph.D., Harvard University, 1967.
Nichols, Deborah L., Adjunct Assistant Professor, Ph.D., Pennsylvania State University, 1980.
Powell, Shirley L., Adjunct Assistant Professor, Ph.D., Arizona State University, 1980.
Rands, Robert L., Professor, Ph.D., Columbia University, 1952.
Riley, Carroll L., Professor, Ph.D., University of New Mexico, 1952.
Taylor, Walter W., Professor, *Emeritus*, Ph.D., Harvard University, 1943.

Applied Technologies (School of Technical Careers)

Beauchamp, Clarence, Assistant Professor, *Emeritus*, M.S., University of Wisconsin, Stout, 1949.
Butts, Thomas, Instructor, Automotive Technology, B.S., Southern Illinois University, 1974.
Cash, Joe R., Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University, 1970.
Crenshaw, J. Howard, Instructor, *Emeritus*, Mathematics and Science, M.S., University of Illinois, 1940.

Greer, Jack, Assistant Professor, Automotive Technology, B.S., Southern Illinois University, 1974.
Harbison, James L., Instructor, *Emeritus,* Mathematics and Science, M.S., University of Illinois, 1940.
Hoyle, Orville Glenn, Instructor, *Emeritus,* Tool and Manufacturing Technology, B.Ed., Western Illinois University, 1931.
Jones, Paul, Instructor, *Emeritus,* Automotive Technology.
Kazda, Joseph G., Assistant Professor, Automotive Technology, M.S.Ed., Southern Illinois University, 1965.
Lampman, Duncan, Associate Professor, Tool and Manufacturing Technology and Construction Technology, M.S.Ed., Southern Illinois University, 1956.
McDonald, James H., Instructor, *Emeritus,* Automotive Technology, B.S.Ed., Central Missouri State University, 1948.
Morris, Michael, Instructor, Automotive Technology, A.A.S., Texas State Technical Institute, 1973.
Muhich, Frank W., Associate Professor, *Emeritus,* Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1957.
Naas, James, Assistant Professor, Construction Technology, B.S., Southern Illinois University, 1972.
Osborn, Harold W., Assistant Professor, Construction Technology, M.S.Ed., Southern Illinois University, 1960.
Ray, O. B., Instructor, *Emeritus,* Automotive Technology, B.S., Murray State University, 1934.
Romack, Charles, Assistant Professor, Automotive Technology, B.S., Southern Illinois University, 1965.
Runkle, Lewis C., Assistant Professor, *Emeritus,* Automotive Technology, B.S., Southern Illinois University, 1965.
Sanders, Eugene, Assistant Professor, Tool and Manufacturing, B.S., Southern Illinois University at Carbondale, 1956.
Simon, Ernest J., Professor, *Emeritus,* M.S., University of Illinois, 1936.
Simpson, Jerry, Assistant Professor, Automotive Technology, M.S., Colorado State University, 1966.
Soderstrom, Harry R., Professor, Tool and Manufacturing Technology, M.S., Bradley University, 1952.
Staley, Glenn Lamb, Instructor, Construction Technology, M.S., Southern Illinois University, 1976.
Traylor, George Lelon, Associate Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1965.
Tregoning, Philip, Assistant Professor, Tool and Manufacturing Technology, M.S.Ed., Southern Illinois University, 1965.
White, James E., Assistant Professor, Automotive Technology, B.S.Ed., Southern Illinois University, 1961.
Willey, Lucian D., Associate Professor, *Emeritus,* Automotive Technology, B.Ed., Western Illinois University, 1936.

Army Military Science

Bosworth, Randall G., Adjunct Instructor.
Brown, Raymond K., Adjunct Instructor.
Fleener, Larry D., Adjunct Professor and *Chairperson,* M.S. Georgia State University, 1973.
Hampton, Julian G., Adjunct Instructor.
Mack, Peter B., Adjunct Assistant Professor, B.A., Arkansas Technical University, 1973.
Raffaeli, Paul J., Adjunct Assistant Professor, B.S., Kearney State College, 1975.
Rowe, Thomas H., Adjunct Assistant Professor.
Winslow, Margaret J., Adjunct Assistant Professor, M.S., Troy State University, 1972.

Art (College of Communications and Fine Arts)

Abrahamson, Roy E., Associate Professor, Ed.D., Columbia University, 1965.
Addington, Aldon M., Associate Professor, M.F.A., Cranbrook Academy of Art, 1966.
Archer, Richard E., Assistant Professor, M.S., Governors State University, 1979.
Barone, Violet Trovillion, Assistant Professor, *Emeritus,* M.A., George Peabody College for Teachers, 1955.
Bernstein, Lawrence A., Associate Professor, M.F.A., Cranbrook Academy of Art, 1953.
Boysen, Bill H., Associate Professor, M.F.A, University of Wisconsin, 1966.

Busch, W. Larry, Assistant Professor, M.S., Southern Illinois University, 1970.
Covington, Patricia Beene, Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1980.
Deller, Harris, Associate Professor, M.F.A., Cranbrook Academy of Art, 1973.
Feldman, Joel B., Assistant Professor, M.F.A., Indiana University, 1967.
Fink, Herbert L., Professor, M.F.A., Yale University, 1958.
Greenfield, Sylvia R., Associate Professor, M.F.A., University of Colorado, 1967.
Johnson, Evert A., Lecturer, M.A., University of Iowa, 1954.
Kington, L. Brent, Professor and *Director,* M.F.A., Cranbrook Academy of Art, 1961.
Lawson, Elnora, Instructor, *Emeritus,* B.Ed., Southern Illinois University, 1936.
Lintault, M. Joan, Associate Professor, M.F.A., Southern Illinois University, 1962.
Littlefield, F. Lee, Assistant Professor, M.A., University of New Mexico, 1968.
Mavigliano, George J., Associate Professor, M.A., Northern Illinois University, 1967.
Mawdsley, Richard, Associate Professor, M.F.A., University of Kansas, 1969.
Onken, Michael O., Assistant Professor, M.A., Northern Illinois University, 1966.
Paulson, Robert L., Associate Professor, M.F.A., University of Wisconsin, 1967.
Roach, Lula D., Associate Professor, *Emerita,* M.A., Washington University, 1953.
Shay, Edward Holden, Associate Professor, M.F.A., University of Illinois, 1971.
Sullivan, James E., Associate Professor, M.A., University of California at Los Angeles, 1965.
Sullivan, Milton F., Professor, M.A., Columbia University, 1951.
Walsh, Thomas J., Professor, M.F.A., University of Michigan, 1962.
Wood, Dan D., Associate Professor, M.A., University of Iowa, 1968.
Youngblood, Michael S., Associate Professor, Ph.D., University of Oregon, 1975.

Aviation Technologies (School of Technical Careers)

Birkhead, Larry M., Assistant Professor and *Coordinator,* Avionics Technology B.A., Southern Illinois University, 1978.
Cannon, Richard H., Assistant Professor, Aviation Technology, B.S., Southern Illinois University, 1982.
Eiff, Gary Marvin, Instructor, Avionics Technology, B.S., Southern Illinois University, 1982.
Elledge, Gale, Visiting Instructor, Avionics Technology.
Grisham, Debra Kay, Visiting Instructor, Avionics Technology, B.S., Southern Illinois University, 1979.
Halverson, Paul David, Instructor, Aviation Technology, M.S., Central Missouri State University, 1978.
Jones, Michael James, Visiting Instructor, Avionics Technology, B.S., Southern Illinois University, 1982.
Kolkmeyer, Robert O., Assistant Professor, Aviation Technology, M.S.Ed., Southern Illinois University, 1971.
Lyon, William Bruce, Instructor, Aviation Technology, A.A.S., Southern Illinois University, 1973.
Milton, William Carl, Instructor, Aviation Technology.
Murphy, Robert Dennis, Instructor, Avionics Technology, B.S.A., University of Puerto Rico, 1980.
O'Brian, Benjamin Harrin, Instructor, Aviation Technology, B.S., University of Akron, 1973.
Ohman, Lennert R., Assistant Professor, Aviation Technology, B.S., University of Illinois, 1964.
Rodriguez, Charles Louis, Instructor, Aviation Technology, B.S., Southern Illinois University, 1978.
Russell, Lewis Glen, Visiting Instructor, Avionics Technology, M.S.Ed., Southern Illinois University, 1978.
Sanders, Robert Frank, Visiting Instructor, B.S., Aviation Technology, 1978.
Schafer, Joseph Allen, Associate Professor and *Director,* Aviation Technology, B.S., Lewis College, 1960.
Staples, Laurence C., Assistant Professor and *Coordinator,* Aviation Technology, B.S., Southern Illinois University, 1975.
Stapleton, Walter Lawson, Instructor, Aviation Technology, B.S., Southern Illinois University, 1981.
Verner, Gerry D., Assistant Professor, Aviation Technology, B.S., Southern Illinois University, 1973.
Williams, Raymond J., Visiting Instructor, Avionics Technology, B.S., Southern Illinois University, 1982.

Botany (College of Science)

Ashby, William C., Professor, Ph.D., University of Chicago, 1950.
Bissing, Donald R., Assistant Professor, Ph.D., Claremont Graduate School, 1976.
Matten, Lawrence C., Professor, Ph.D., Cornell University, 1965.
Mohlenbrock, Robert H., Professor, Ph.D., Washington University, 1957.
Olah, Ladislao V., Professor, *Emeritus*, Ph.D., Stephen Tisza University, Hungary, 1934.
Pappelis, Aristotel J., Professor, Ph.D., Iowa State University, 1957.
Robertson, Philip A., Associate Professor, Ph.D., Colorado State University, 1968.
Schmid, Walter E., Professor, Ph.D., University of Wisconsin, 1961.
Stotler, Barbara C., Professor, Ph.D., University of Cincinnati, 1968.
Stotler, Raymond E., Associate Professor, Ph.D., University of Cincinnati, 1968.
Sundberg, Walter J., Associate Professor, Ph.D., University of California, 1971.
Tindall, Donald R., Professor and *Chairperson*, Ph.D., University of Louisville, 1966.
Ugent, Donald, Professor, Ph.D., University of Wisconsin, 1966.
Verduin, Jacob, Professor, *Emeritus*, Ph.D., Iowa State University, 1947.
Voigt, John W., Professor, Ph.D., University of Nebraska, 1950.
Yopp, John H., Professor, Ph.D., University of Louisville, 1969.

Center for the Study of Crime, Delinquency, and Corrections (College of Human Resources)

Alexander, Myrl E., Professor, *Emeritus*, LL.D., Manchester College of Indiana, 1956.
Anderson, Dennis, Associate Professor, Ed.D., University of Nebraska, 1970.
Coughlin, Joseph S., Professor and *Director*, M.S.W., University of Wisconsin, 1954.
Johnson, Elmer H., Professor, Ph.D., University of Wisconsin, 1950.
Lorinskas, Robert A., Associate Professor, Ph.D., University of Georgia, 1973.
Matthews, Charles V., Associate Professor, M.S., University of Kansas City, 1951.
Moore, Richard H., Assistant Professor, Ph.D., University of Nebraska at Lincoln, 1972.
Riedel, Marc P., Associate Professor, Ph.D., University of Pennsylvania, 1972.
Robinson, Cyril D., Associate Professor, LL.B., Northwestern University, 1952.
Schneider, Victoria Wood, Instructor, M.S., University of Alabama, 1980.
Timm, Howard W., Assistant Professor, Ph.D., Michigan State University, 1979.
Wilson, Nanci K., Associate Professor, Ph.D., University of Tennessee, 1972.

Chemistry and Biochemistry (College of Science)

Arnold, Richard T., Professor, *Emeritus*, Ph.D., University of Illinois, 1937.
BeMiller, James N., Professor, Ph.D., Purdue University, 1959.
Beyler, Roger E., Professor, Ph.D., University of Illinois, 1949.
Bolen, D. Wayne, Professor, Ph.D., Florida State University, 1969.
Brown, George E., Professor, *Emeritus*, Ph.D., Iowa State University, 1941.
Carle, Glenn C., Adjunct Assistant Professor, B.S., California State Polytechnic University, 1963.
Caskey, Albert L., Associate Professor, Ph.D., Iowa State University, 1961.
Cox, James A., Professor, Ph.D., University of Illinois, 1967.
Dunkerton, Lois V., Assistant Professor, Ph.D., Cornell University, 1974.
Emptage, Michael R., Assistant Professor, Ph.D., Harvard University, 1965.
Guyon, John C., Professor, Ph.D., Purdue University, 1961.
Hadler, Herbert I., Professor, Ph.D., University of Wisconsin, 1952.
Hadley, Elbert H., Professor, *Emeritus*, Ph.D., Duke University, 1940.
Hall, J. Herbert, Professor, Ph.D., University of Michigan, 1959.
Hargrave, Paul A., Professor, Ph.D., University of Minnesota, 1970.
Hinckley, Conrad C., Professor, Ph.D., University of Texas, 1964.
Kolb, Vera M., Adjunct Assistant Professor, Ph.D., Southern Illinois University, 1976.
Koster, David F., Professor, Ph.D., Texas A & M University, 1965.
Meyers, Cal Y., Professor, Ph.D., University of Illinois, 1951.
Neckers, J. W., Professor, *Emeritus*, Ph.D., University of Illinois, 1927.
Phillips, John B., Associate Professor, Ph.D., University of Arizona, 1977.
Scheiner, Steven I., Associate Professor, Ph.D., Harvard University, 1976.

Schmit, Joseph, Associate Professor, Ph.D., Purdue University, 1971.
Schmulbach, C. David, Professor, Ph.D., University of Illinois, 1958.
Shriver, John W., Assistant Professor, Ph.D., Case Western University, 1977.
Smith, Gerald V., Professor, Ph.D., University of Arkansas, 1959.
Trimble, Russell F., Professor, Ph.D., Massachusetts Institute of Technology, 1951.
Tyrrell, James, Professor and *Chairperson,* Ph.D., University of Glasgow, 1963.
Van Lente, Kenneth A., Professor, *Emeritus,* Ph.D., University of Michigan, 1931.
Wotiz, John H., Professor, Ph.D., Ohio State University, 1948.

Cinema and Photography (College of Communications and Fine Arts)

Blumenberg, Richard M., Professor, Ph.D., Ohio University, 1969.
Bolton, Richard L., Jr., Assistant Professor, M.F.A., Cranbrook Academy, 1981.
Boruszkowski, Lilly A., Assistant Professor, M.F.A., Northwestern University, 1979.
Cocking, Loren D., Assistant Professor, M.A., Ohio State University, 1969.
Covell, Michael D., Assistant Professor, M.F.A., Ohio University, 1975.
Gilmore, David A., Associate Professor, M.F.A., Ohio University, 1969.
Horrell, C. William, Professor, *Emeritus,* Ed.D., Indiana University, 1955.
Kolb, Gary P., Assistant Professor, M.F.A., Ohio University, 1977.
Lowry, Edward B., Assistant Professor, Ph.D., University of Texas at Austin, 1982.
Lyons, Timothy J., Professor and *Chairperson,* Ph.D., University of Iowa, 1972.
Mercer, John, Professor, *Emeritus,* University of Nebraska, 1952.
Paine, Frank, Associate Professor, *Emeritus,* B.S., Iowa State University, 1950.
Paul, Kathryn, Assistant Professor, M.F.A., Arizona State University, 1973.
Powell, W. Duane, Assistant Professor, M.F.A., University of Illinois, 1977.
Swedlund, Charles A., Professor, M.S., Illinois Institute of Technology, 1961.

Civil Engineering and Mechanics (College of Engineering and Technology)

Brower, William E., Jr., Associate Professor, Ph.D., Massachusetts Institute of Technology, 1969.
Craddock, James N., Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 1979.
Davis, Philip, Professor and *Chairperson,* Ph.D., University of Michigan, 1963.
Evers, James, Associate Professor, Ph.D., University of Alabama, 1969.
Kassimali, Aslam, Assistant Professor, Ph.D., University of Missouri, 1976.
Nowacki, C. Raymond, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 1965.
Orthwein, William, Professor, Ph.D., University of Michigan, 1959.
Rubayi, Najim, Professor, Ph.D., Univeristy of Wisconsin, 1966.
Sami, Sedat, Professor, Ph.D., Univeristy of Iowa, 1966.
Yen, Shing-Chung, Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1984.

Communication Disorders and Sciences (College of Comunications and Fine Arts)

Anderson, John O., Professor, Ph.D., Ohio State University, 1950.
Blache, Stephen E., Associate Professor, Ph.D., Ohio University, 1970.
Brackett, I.P., Professor, *Emeritus,* Ph.D., Northwestern University, 1947.
Brutten, Gene J., Professor, Ph.D., University of Illinois, 1957.
Craig, Lillian L., Assistant Professor, Ph.D., Southern Illinois University, 1972.
Crary, Michael A., Associate Professor, Ph.D., Ohio University, 1978.
Hoshiko, Michael S., Professor, Ph.D., Purdue University, 1957.
Lehr, Robert, Associate Professor, Ph.D., Baylor University, 1971.
Ruder, Kenneth F., Professor and *Chairperson,* Ph.D., University of Florida, 1969.
Saul, Richard S., Assistant Professor, Ph.D., State University of New York at Buffalo, 1982.
Smaldino, Joseph J., Associate Professor, Ph.D., University of Florida, 1974.

Comprehensive Planning and Design (College of Human Resources)

Berry, Thelma Huff, Professor, *Emerita,* Ed.D., Columbia University, 1963.
Campbell, Linda, Visiting Instructor, M.S., Southern Illinois University, 1976.
Grise, Kay S., Assistant Professor, Ph.D., University of Tennessee, 1980.
Hays, Denny M., Assistant Professor, A.I.A. Registered Architect, M. of Arch., University of Utah, Salt Lake City, 1971.
Kula, Elsa, Lecturer, *Emerita,* B.F.A., Pratt Institute, Brooklyn, New York, 1977.
Lougeay, Paul J., Associate Professor, *Emeritus,* Registered Architect, M.S., Southern Illinois University, 1973.
McDonald, Antonette, Visiting Instructor, M.S., Southern Illinois University, 1973.
McGinnis, R. Guy, Assistant Professor, B.Arch., B.F.A., Pratt Institute, 1973, 1972.
Medelsohn, Stanley, Visiting Associate Professor, Diploma Arch., Oxford, 1951.
Nuetzel, Carolyn, Assistant Professor, M.Arch., Washington University, 1976.
Padgett, Rose, Professor, *Emerita,* Ph.D., Purdue University, 1955.
Perk, H.F.W., Lecturer, A.B., University of California at Los Angeles, 1951.
Perry, Richard A., Assistant Professor, M.F.A., University of Georgia, 1976.
Pratt, Davis J., Lecturer, *Emeritus,* Certificate, University of Chicago, IIT, Institute of Design, Chicago.
Pulley, Charles M., Assistant Professor, *Emeritus,* Registered Architect, B.S., University of Illinois, 1939.
Ridley, Samantha Sue, Assistant Professor, M.S., Southern Illinois University, 1959.
Schoen, Alan Hugh, Professor, Ph.D., University of Illinois, 1958.
Stewart, Lucy P., Assistant Professor, *Emerita,* M.S., Southern Illinois University, 1964.
St. John, Wayne L., Associate Professor, Ph.D., University of Oregon, 1954.
Whitesel, Ritta, Associate Professor, *Emerita,* M.A., Columbia University, 1941.
Wyers-Smith, Marion, Assistant Professor, M.S., University of Tennessee, 1978.

Computer Science (College of Liberal Arts)

Danhof, Kenneth J., Professor and *Chairperson,* Ph.D., Purdue University, 1969.
Harris, J. Archer, Assistant Professor, Ph.D., State University of New York at Stony Brook, 1978.
Mark, Abraham M., Professor, Ph.D., Cornell University, 1947.
McGlinn, Robert, Assistant Professor, Ph.D., Southern Illinois University, 1976.
Pagan, Frank G., Associate Professor, Ph.D., University of Toronto, 1972.
Robinson, Robert W., Professor, Ph.D., Cornell University, 1966.
Thanawastien, Suchai, Assistant Professor, Ph.D., Auburn University, 1982.
Varol, Yaakov, Associate Professor, Ph.D., University of Wyoming, 1971.
Wright, William E., Associate Professor, D.Sc., Washington University, 1972.
Zargham, Mehdi R., Assistant Professor, Ph.D., Michigan State University, 1983.

Curriculum, Instruction, and Media (College of Education)

Aikman, Arthur L., Professor, Ph.D., Southern Illinois University, 1965.
Alston, Melvin O., Professor, *Emeritus,* Ed.D., Columbia University, 1945.
Barrette, Pierre, Associate Professor, Ed.D., University of Massachusetts, 1971.
Bauner, Ruth E., Associate Professor, Ph.D., Southern Illinois University, 1978.
Becker, Jerry P., Professor, Ph.D., Stanford University, 1967.
Bedient, Douglas, Associate Professor, Ph.D., Southern Illinois University, 1971.
Boykin, Arsene O., Associate Professor, *Emerita,* Ed.D., University of Illinois, 1964.
Bradfield, Joyce M., Instructor, *Emerita,* M.A., George Peabody College for Teachers, 1946.
Bradfield, Luther E., Professor, *Emeritus,* Ed.D., Indiana University, 1953.
Brod, Ernest E., Professor, *Emeritus,* Ed.D., University of Northern Colorado, 1953.
Brown, Bill, Instructor, *Emeritus,* M.Ed., University of Missouri, 1946.
Buser, Margaret, Instructor, M.S. Ed., Indiana University, 1966.
Butts, Gordon K., Professor, *Emeritus,* Ed.D., Indiana University, 1956.
Byrd, David M., Associate Professor, Ph.D., Syracuse University, 1980.
Casey, John P., Professor, *Emeritus,* Ed.D., Indiana University, 1963.

Copenhaver, Ron W., Associate Professor, Ed.D., Indiana University, 1978.
Cox, Dorothy, Assistant Professor, Ph.D., Southern Illinois University, 1976.
Dale, Doris C., Professor, D.L.S., Columbia University, 1968.
DeWeese, Jewel V., Instructor, *Emerita,* M.S. Ed., Southern Illinois University, 1971.
Dixon, Billy G., Associate Professor and *Chairperson,* Ph.D., Southern Illinois University, 1967.
Eddleman, E. Jacqueline, Associate Professor, Ph.D., Southern Illinois University, 1970.
Edwards, Troy W., Professor, *Emeritus,* Ed.D., Indiana University, 1954.
Fletcher, Kathleen G., Associate Professor, *Emerita,* M.S., University of Illinois, 1947.
Gulley, S. Beverly, Associate Professor, Ph.D., Southern Illinois University, 1974.
Hill, Margaret K., Professor, *Emerita,* Ed.D., Boston University, 1948.
Hines, Stephen J., Assistant Professor, Ed.D., Northern Illinois University, 1981.
Hungerford, Harold R., Professor, Ph.D., Southern Illinois University, 1970.
Jacko, Carol, Associate Professor, Ph.D., University of Pittsburgh, 1974.
Jackson, James, Associate Professor, Ph.D., University of Wisconsin, 1976.
Jackson, Michael, Associate Professor, Ed.D., University of Florida, 1971.
Jacobs, Ronald L., Assistant Professor, Ph.D., Indiana University, 1980.
Jones, Dan R., Associate Professor, Ed.D., Indiana University, 1978.
Jones, Jennie Y., Assistant Professor, A.M., University of Illinois, 1949.
Karmos, Ann, Associate Professor, Ph.D., Southern Illinois University, 1975.
Killian, Joyce E., Assistant Professor, Ph.D., Pennsylvania State University, 1980.
Klasek, Charles B., Professor, Ph.D., University of Nebraska, 1971.
Lamb, Morris L., Associate Professor, Ed.D., University of Oklahoma, 1970.
Lee, J. Murray, Professor, *Emeritus,* Ph.D., Columbia University, 1934.
Leming, James, Associate Professor, Ph.D., University of Wisconsin, 1973.
Lindberg, Dormalee H., Professor, Ed.D., University of Missouri, Columbia, 1969.
Lipsey, William, Lecturer, *Emeritus,* Ed.D., Northwestern University, 1952.
Malone, Willis E., Professor, *Emeritus,* Ph.D., Ohio State University, 1950.
Matthias, Margaret, Associate Professor, Ph.D., Southern Illinois University, 1972.
McIntyre, John, Associate Professor, Ed.D., Syracuse University, 1977.
Meehan, Elizabeth C., Assistant Professor, *Emerita,* A.M., University of Illinois, 1940.
Meyer, Edra T., Instructor, *Emerita,* M.S., Southern Illinois University, 1956.
Moore, Eryn E., Assistant Professor, Ph.D., Southern Illinois University, 1976.
Nelson, JoAnn, Assistant Professor, Ph.D., University of Illinois, 1980.
Norris, William, Associate Professor, Ed.D., Indiana University, 1973.
Paige, Donald D., Professor, Ed.D., Indiana University, 1966.
Ponton, Melva F., Assistant Professor, M.S., University of Illinois, 1951.
Pope, Cedric A., Assistant Professor, *Emeritus,* Ed.D., University of Northern Colorado, 1959.
Quisenberry, James D., Associate Professor, Ph.D., Indiana University, 1972.
Quisenberry, Nancy L., Professor, Ed.D., Indiana University, 1971.
Randolph, Victor, Professor, *Emeritus,* Ph.D., George Peabody College for Teachers, 1942.
Rogers, Shirley M., Assistant Professor, M.S. Ed., Southern Illinois University, 1961.
Rubba, Peter A., Associate Professor, Ed.D., Indiana University, 1977.
Samford, Clarence, Professor, *Emeritus,* Ph.D., New York University, 1940.
Scheer, Janet K., Associate Professor, Ph.D., Arizona State University, 1977.
Seiferth, Berniece B., Professor, Ed.D., University of Missouri, 1955.
Shelton, Vivian H., Instructor, M.S. Ed., Southern Illinois University, 1965.
Shepherd, Terry R., Associate Professor, Ph.D., University of Illinois, 1971.
Sloan, Fred A., Professor, Ed.D., George Peabody College of Vanderbilt University, 1959.
Solliday, Michael, Associate Professor, Ph.D., Southern Illinois University, 1975.
Spigle, Irving S., Associate Professor, *Emeritus,* Ed.D., Indiana University, 1955.
Stephens, Clarence, Professor, *Emeritus,* Ed.D., Indiana University, 1955.
Tomera, Audrey, Professor, Ph.D., Southern Illinois University, 1973.
Treece, Madelyn, Assistant Professor, *Emerita,* A.M., University of Chicago, 1936.
Wendt, Paul R., Professor, *Emeritus,* Ph.D., University of Minnesota, 1948.
Winsor, Donald, Associate Professor, *Emeritus,* Ed.D., University of Florida, 1961.
Wood, Ruth B., Instructor, *Emerita,* M.S., University of Illinois, 1948.

Economics (College of Liberal Arts)

Bhandari, Jagdeep, Assistant Professor, Ph.D., Southern Methodist University, 1980.
Chuma, Hiroyuki, Assistant Professor, Ph.D., State University of New York at Buffalo, 1984.
Edelman, Milton T., Professor, *Emeritus,* Ph.D., University of Illinois, 1951.
Ellis, Robert J., Jr., Associate Professor and *Chairperson,* Ph.D., University of Virginia, 1966.

Fare, Rolf, Associate Professor, Docent., University of Lund, 1976.
Foran, Terry G., Associate Professor, Ph.D., Pennsylvania State University, 1971.
Fryman, Richard F., Associate Professor, Ph.D., University of Illinois, 1967.
Gellerson, Mark, Assistant Professor, Ph.D., Syracuse University, 1978.
Grabowski, Richard, Assistant Professor, Ph.D., University of Utah, 1977.
Grosskopf, Shawna, Assistant Professor, Ph.D., Syracuse University, 1977.
Hand, George H., Professor, *Emeritus,* Ph.D., Princeton University, 1939.
Hickman, C. Addison, Professor, *Emeritus,* Vandeveer Chair of Economics, Ph.D., University of Iowa, 1942.
Layer, Robert G., Professor, *Emeritus,* Ph.D., Harvard University, 1952.
Margaritis, Dimitrios, Assistant Professor, Ph.D., SUNY, Buffalo, 1982.
Mitchell, Thomas, Assistant Professor, Ph.D., Brown University, 1983.
Morrison, Vernon G., Professor, *Emeritus,* Ph.D., University of Nebraska, 1961.
Myers, John G., Professor, Ph.D., Columbia University, 1961.
Primont, Daniel A., Professor, Ph.D., University of California at Santa Barbara, 1970.
Robinson, William D., Assistant Professor, Ph.D., Northwestern University, 1982.
Sharma, Subhash, Assistant Professor, Ph.D., University of Kentucky, 1983.
Shields, Michael P., Assistant Professor, Ph.D., University of Utah, 1975.
Takayama, Akira, Professor, Vandeveer Chair of Economics, Ph.D., University of Rochester, 1962.
Tamor, Kenneth L., Assistant Professor, Ph.D., UCLA, 1981.
Trescott, Paul B., Professor, Ph.D., Princeton University, 1954.
Wiegand, G. C., Professor, *Emeritus,* Ph.D., Northwestern University, 1950.

Educational Leadership (College of Education)

Armistead, Fred J., Professor, *Emeritus,* Ph.D., University of California, 1960.
Bach, Jacob O., Professor, *Emeritus,* Ph.D., University of Wisconsin, 1951.
Bracewell, George, Professor, *Emeritus,* Ed.D., Washington University, 1952.
Brammell, Paris R., Professor, *Emeritus,* Ph.D., University of Washington, 1930.
Bryant, Roye R., Professor, *Emeritus,* D.Ed., Washington University, 1952.
Buser, Robert L., Professor, Ed.D., Indiana University, 1966.
Childs, John L., Professor, *Emeritus,* Ph.D., Teachers College, Columbia University, 1931.
Clark, Elmer J., Professor, Ph.D., University of Michigan, 1949.
Dennis, Lawrence J., Professor, Ph.D., Southern Illinois University, 1968.
Duff, Grace H., Assistant Professor, *Emerita,* Ph.D., Southern Illinois University, 1970.
Eaton, William E., Professor, Ph.D., Washington University, 1971.
Ewing, Parmer L., Professor, *Emeritus,* Ed.D., New York University, 1950.
Fishback, Woodson W., Associate Professor, *Emeritus,* Ph.D., University of Chicago, 1947.
Greer, Charles E., Visiting Assistant Professor, Ph.D., Southern Illinois University, 1977.
Hall, James H., Associate Professor, *Emeritus,* Ed.D., George Washington University, 1950.
Jacobs, Robert, Professor, *Emeritus,* Ed.D., Wayne State University, 1949.
Jellen, Hans G., Assistant Professor, Ph.D., University of Virginia, 1981.
Kaiser, Dale E., Professor, Ph.D., University of Illinois, 1963.
Lawler, Eugene S., Professor, *Emeritus,* Ph.D., Columbia University, 1932.
Lean, Arthur E., Professor, *Emeritus,* Ph.D., University of Michigan, 1948.
Matthias, William, Associate Professor, Ed.D., University of Illinois, 1964.
McKenzie, William R., Professor, *Emeritus,* Ed.D., University of Denver, 1953.
Merwin, Bruce W., Professor, *Emeritus,* Ph.D., University of Kansas, 1929.
Miller, Harry G., Professor, Ed.D., University of Nebraska, 1970.
Moore, Malvin E., Professor, Ed.D., George Peabody College for Teachers, 1959.
Neal, Charles D., Professor, *Emeritus,* Ed.D., Indiana University, 1948.
Parker, James C., Professor and *Chairperson,* Ed.D., University of Tennessee, 1971.
Sasse, Edward B., Professor, Ph.D., University of Wisconsin, 1966.
Shelton, William E., Associate Professor, *Emeritus,* Ph.D., University of Chicago, 1950.
Stuck, Dean, Professor, Ph.D., Iowa State University, 1968.
Verduin, John R., Jr., Professor, Ph.D., Michigan State University, 1962.
Warren, F. G., Professor, *Emeritus,* A.M., University of Chicago, 1928.
Wohlwend, Herbert W., Associate Professor, Ph.D., Southern Illinois University, 1964.

Educational Psychology (College of Education)

Altekruse, Michael K., Professor, Ed.D., Indiana University, 1967.
Bardo, Harold R., Associate Professor, Ph.D., Southern Illinois University, 1972.

Beggs, Donald L., Professor, Ph.D., University of Iowa, 1966.
Bradley, Richard W., Professor, Ph.D., University of Wisconsin, 1968.
Brown, Beverly, Assistant Professor, Ph.D., Univeristy of Iowa, 1974.
Cody, John J., Professor and *Chairperson*, Ph.D., Univeristy of Wisconsin, 1961.
Daniels, M. Harry, Assistant Professor, Ph.D., University of Iowa, 1978.
Deichmann, John W., Associate Professor, Ph.D., St. Louis University, 1969.
DeWeese, Harold L., Professor, *Emeritus*, Ed.D., University of Illinois, 1959.
Dillon, Ronna, Associate Professor, Ph.D., University of California at Riverside, 1978.
Elmore, Patricia B., Associate Professor, Ph.D., Southern Illinois University, 1970.
Graham, Jack W., Professor, Ph.D., Purdue University, 1951.
Grenfell, John E., Professor, Ed.D., Oregon State University, 1966.
Kelly, Francis J., Professor, Ph.D., University of Texas, 1963.
Leitner, Dennis, Associate Professor, Ph.D., University of Maryland, 1975.
Lewis, Ernest, Professor, Ph.D., Southern Illinois University, 1971.
Meek, Clinton Roscoe, Professor, *Emeritus*, Ph.D., George Peabody College for Teachers, 1954.
Mouw, John T., Professor, Ed.D., University of South Dakota, 1968.
Pohlmann, John T., Associate Professor, Ph.D., Southern Illinois University, 1972.
Prichard, Karen K., Assistant Professor, Ph.D., Kent State University, 1981.
Renzaglia, Guy A., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952.
Snowman, Jack, Associate Professor, Ph.D., Indiana University, 1975.
White, Gordon, Assistant Professor, Ph.D., University of Iowa, 1969.
Woehlke, Paula L., Associate Professor, Ph.D., Arizona State University, 1973.
Yates, J.W., Professor, Ed.D., University of Missouri, Columbia, 1951.

Electrical Engineering (College of Engineering and Technology)

Begley, David L., Associate Professor, Ph.D., University of Missouri at Rolla, 1978.
Brown, David P., Professor and *Chairperson*, Ph.D., Michigan State University, 1961.
Dhali, Shirshak, Assistant Professor, Ph.D., Texas Tech University, 1984.
Dodd, Curtis W., Associate Professor, Ph.D., Arizona State University, 1967.
Feiste, Vernold K., Associate Professor, Ph.D., University of Missouri at Columbia, 1966.
Goben, Charles A., Professor, Ph.D., Iowa State University, 1965
Hu, C.J., Professor, Ph.D., University of Colorado-Boulder, 1966.
McCalla, Thomas, Jr., Associate Professor, Ph.D., Case Western Reserve University, 1969.
Mohan, M. Anand, Associate Professor, Ph.D., Indian Institute of Technology, 1970.
Pourboghrat, Farzad, Assistant Professor, Ph.D., University of Iowa, 1984.
Rawlings, Charles A., Associate Professor, Ph.D., Southern Illinois University, 1974.
Smith, James G., Professor, Ph.D., University of Missouri at Rolla, 1967.
Thomopoulos, Stelios, Assistant Professor, Ph.D., State University of New York at Buffalo, 1983.
Viswanathan, R., Assistant Professor, Ph.D., Southern Methodist University, 1983.

English (College of Liberal Arts)

Appleby, Bruce C., Associate Professor, Ph.D., University of Iowa, 1967.
Benziger, James G., Professor, *Emeritus*, Ph.D., Princeton University, 1941.
Bernhardt, Stephen A., Assistant Professor, Ph.D., University of Michigan, 1981.
Black, Rose, Instructor, *Emerita*, M.A., Ohio State University, 1926.
Boyle, Ted Eugene, Professor, Ph.D., University of Nebraska, 1962.
Brown, William J., Associate Professor, Ph.D., Duke University, 1966.
Burns, Winifred, Assistant Professor, *Emerita*, M.A., University of Illinois, 1933.
Clark, Martha, Instructor, *Emerita*, A.M., Southern Illinois University, 1953.
Cohn, Alan Martin, Professor, M.S., University of Illinois, 1955.
Coleman, E. C., Professor, *Emeritus*, Ph.D., University of Illinois, 1936.
Collins, K.K., Associate Professor, Ph.D., Vanderbilt University, 1976.
Dodd, Diana L., Assistant Professor, *Emerita*, M.A., Southern Illinois University, 1954.
Donow, Herbert, Professor, Ph.D., University of Iowa, 1966.
Friend, Jewell, Associate Professor, *Emerita*, Ph.D., Southern Illinois University, 1970.
Goodin, George, Associate Professor, Ph.D., University of Illinois, 1962.
Graham, Philip, Assistant Professor, M.A., City College of New York, 1976.
Griffin, Robert P., Associate Professor, Ph.D., University of Connecticut, 1965.
Hatton, Thomas J., Associate Professor, Ph.D., University of Nebraska, 1966.
Hillegas, Mark, Professor, *Emeritus*, Ph.D., Columbia University, 1957.

Hilliard, Lewis J., Assistant Professor, M.S. in Ed., Southern Illinois University, 1952.
Howell, John M., Professor and *Chairperson*, Ph.D., Tulane University, 1963.
Hurley, Paul, Professor, Ph.D., Duke University, 1962.
Krappe, Edith, Associate Professor, *Emerita*, Ph.D., University of Pennsylvania, 1953.
Kvernes, David M., Assistant Professor, Ph.D., University of Minnesota, 1967.
Lamb, Mary, Associate Professor, Ph.D., Columbia University, 1976.
Lawson, Richard A., Associate Professor, Ph.D., Tulane University, 1966.
Light, James F., Professor, Ph.D., Syracuse University, 1953.
Lingle, Fred, Assistant Professor, *Emeritus*, A.M., University of Illinois, 1935.
Little, Judy Ruth, Associate Professor, Ph.D., University of Nebraska, 1969.
Martin, Joan Foley, Assistant Professor, M.A., Southern Illinois University, 1959.
McNichols, Edward L., Instructor, M.A., University of Detroit, 1958.
Mitchell, Betty Lou, Assistant Professor M.A., Southern Illinois University, 1951.
Moss, Sidney P., Professor, Ph.D., University of Illinois, 1954.
Partlow, Robert B., Jr., Professor, *Emeritus*, Ph.D., Harvard University 1955.
Peterson, Richard F., Professor, Ph.D., Kent State University, 1969.
Piper, Henry Dan, Professor, Ph.D., University of Pennsylvania, 1950.
Rainbow, R.S., Associate Professor, Ph.D., University of Chicago, 1950.
Richman, Lois Anne, Assistant Professor, A.M., University of Illinois, 1962.
Rudnick, Hans, Professor, Ph.D., University of Freiburg, Germany, 1966.
Schonhorn, Manuel, Professor, Ph.D., University of Pennsylvania, 1963.
Simeone, William E., Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1950.
Simon, Mary C., Instructor, *Emerita*, A.M., University of Illinois, 1940.
Smith, Gary, Assistant Professor, Ph.D., Stanford University, 1981.
Stibitz, E. Earle, Professor, *Emeritus*, Ph.D., University of Michigan, 1951.
Taylor, Larry E., Associate Professor, Ph.D., University of Oklahoma, 1969.
Travis, Edna, Instructor, *Emerita*, M.S. in Ed., Southern Illinois University, 1948.
Vieth, David Muench, Professor, Ph.D., Yale University, 1953.
Webb, Howard W., Jr., Professor, Ph.D., University of Iowa, 1953.
Weshinskey, Roy K., Assistant Professor, M.S., Southern Illinois University, 1950.

Finance (College of Business and Administration)

Davids, Lewis E., Professor, Ph.D., New York University, 1949.
Elsaid, Hussein H., Professor, Ph.D., University of Illinois, 1968.
Gombola, Michael, Associate Professor, Ph.D., University of South Carolina, 1977.
Jose, Manuel L., Instructor, M.B.A., Virginia Polytechnic Institute, 1980.
Kahl, Douglas R., Assistant Professor, Ph.D., University of Iowa, 1981.
Kim, Sang-Hoon, Assistant Professor, Ph.D., University of Wisconsin, 1979.
Mathur, Iqbal, Professor and *Chairperson*, Ph.D., University of Cincinnati, 1974.
Stevens, Jerry L., Assistant Professor, University of Illinois, 1980.
Tyler, R. Stanley, Associate Professor, J.D., University of Illinois, 1952.
Vaughn, Donald E., Professor, Ph.D., University of Texas, 1961.
Waters, Gola E., Professor, J.D., University of Iowa, 1957, Ph.D., Southern Illinois University, 1970.

Food and Nutrition (School of Agriculture)

Becker, Henrietta, Lecturer, *Emerita*, M.S., Southern Illinois University, 1964.
Endres, Jeannette M., Professor, Ph.D., St. Louis University, 1972.
Harper, Jenny M., Professor, *Emerita*, Ph.D., Cornell University, 1941.
Konishi, Frank, Professor, Ph.D., Cornell University, 1958.
Payne, Irene R., Professor, Ph.D., Cornell University, 1960.
Welch, Patricia, Assistant Professor, Ph.D., Southern Illinois University, 1982.

Foreign Languages and Literatures (College of Liberal Arts)

Aydt, Judith, Assistant Professor, M.A., Southern Illinois University, 1966.
Betz, Frederick, Associate Professor, Ph.D., Indiana University, 1973.
Bodine, Jay F., Visiting Assistant Professor, Ph.D., Princeton University, 1973.
Bork, Albert W., Professor, *Emeritus*, Doctor en Letras, National University of Mexico, 1944.

Canfield, D. Lincoln, Professor, *Emeritus,* Ph.D., Columbia University, 1934.
Childs, Margaret H., Assistant Professor, Ph.D., University of Pennsylvania, 1983.
Davis, J. Cary, Professor, *Emeritus,* Ph.D., University of Chicago, 1936.
Gobert, David L., Professor, Ph.D., University of Iowa, 1960.
Hartman, Steven Lee, Associate Professor, Ph.D., University of Wisconsin, 1971.
Hartwig, Hellmut A., Professor, *Emeritus,* Ph.D., University of Illinois, 1943.
Keller, Thomas, Associate Professor, Ph.D., University of Colorado, 1975.
Kilker, James, Professor, Ph.D., University of Missouri at Columbia, 1961.
Kupcek, Joseph, Professor, *Emeritus,* Ph.D., Comenius University, Bratislava, Czechoslovakia, 1943.
Liedloff, Helmut, Professor and *Chairperson,* Ph.D., Phillips University, Germany, 1956.
McBride, Charles, Associate Professor, Ph.D., University of Texas, 1968.
McBride, Maria-Odilia, Adjunct Assistant Professor, Ph.D., University of Texas at Austin, 1981.
Meinhardt, Warren, Associate Professor, Ph.D., University of California at Berkeley, 1965.
Neufeld, Anna K., Assistant Professor, *Emerita,* M.A., University of Kansas, 1937.
O'Brien, Joan, Professor, Ph.D., Fordham University, 1961.
O'Meara, Maurice, Associate Professor, Ph.D., University of Iowa, 1967.
Orechwa, Olga, Associate Professor, Ph.D., Ukrainian Free University, Germany, 1970.
Peacock, Vera L., Professor, *Emerita,* Ph.D., Cornell University, 1930.
Speck, Charles, Assistant Professor, Laurea in Diritto Canonico, Pontifical Lateran University, Italy, 1963.
Tai, James, Associate Professor, Ph.D., Indiana University, 1970.
Timpe, Eugene F., Professor, Ph.D., University of Southern California, 1960.
Ulner, Arnold, Assistant Professor, Ph.D., University of Missouri at Columbia, 1972.
Vogely, Maxine, Assistant Professor, *Emerita,* Ph.D., University of Illinois, 1969.
Wilkinson, Mildred, Assistant Professor, M.A., Southern Illinois University, 1965.
Williams, Frederick L., Assistant Professor, Ph.D., Cornell University, 1976.
Winters, Margaret E., Associate Professor, Ph.D., University of Pennsylvania, 1975.
Woodbridge, Hensley, Professor, Ph.D., University of Illinois, 1950.

Forestry (School of Agriculture)

Aubertin, Gerald M., Associate Professor, Ph.D., Pennsylvania State University, 1964.
Budelsky, Carl A., Assistant Professor, Ph.D., University of Arizona, 1969.
Burde, John H., III, Associate Professor, Ph.D., University of Arizona, 1975.
Chen, Peter Y.S., Adjunct Assistant Professor, Ph.D., University of Minnesota, 1968.
Chilman, Kenneth C., Associate Professor, Ph.D., University of Michigan, 1972.
Chong, She Kong, Associate Professor, Ph.D., University of Hawaii, 1979.
Clausen, Knud E., Adjunct Assistant Professor, Ph.D., University of Minnesota, 1961.
Fralish, James S., Associate Professor, Ph.D., University of Wisconsin, 1970.
Gaffney, Gerald R., Assistant Professor, Ph.D., Southern Illinois University, 1970.
Kessler, Kenneth J., Adjunct Assistant Professor, Ph.D., West Virginia University, 1959.
Kung, Fan H., Professor, Ph.D., Michigan State University, 1968.
McCurdy, Dwight R., Professor, Ph.D., Ohio State University, 1964.
Myers, Charles C., Associate Professor, Ph.D., Purdue University, 1966.
Ponder, Felix, Jr., Adjunct Assistant Professor, Ph.D., Southern Illinois University-Carbondale, 1978.
Rink, George, Adjunct Assistant Professor, Ph.D., University of Tennessee, 1974.
Rosen, Howard H., Adjunct Assistant Professor, Northwestern University, 1969.
Schlesinger, Richard C., Adjunct Assistant Professor, Ph.D., State University of New York, 1970.
Steward, Harold A., Adjunct Assistant Professor, M.W.T., University of Michigan, 1967.
Roth, Paul L., Professor, Ph.D., Kansas State University, 1968.
Van Sambeek, Jerome W., Adjunct Assistant Professor; Ph.D., Washington University, 1975.
Weaver, George T., Professor and *Chairperson,* Ph.D., University of Tennessee, 1972.
Weber, Barbara C., Adjunct Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1982.
Yambert, Paul A., Professor, Ph.D., University of Michigan, 1961.

Geography (College of Liberal Arts)

Arey, David G., Associate Professor and *Chairperson,* Ph.D., Clark University, 1969.
Baumann, Duane D., Professor, Ph.D., Clark University, 1968.

Beazley, Ronald I., Professor, Ph.D., Purdue University, 1954.
Christensen, David E., Professor, Ph.D., University of Chicago, 1956.
Horsley, A. Doyne, Assistant Professor, Ph.D., Southern Illinois University, 1974.
Irwin, Daniel R., Associate Professor, Ph.D., Syracuse University, 1972.
Jones, David L., Professor, Ph.D., Pennsylvania State University, 1960.
Krause, Annemarie, Associate Professor, *Emerita*, Ph.D., University of Chicago, 1952.
Lieber, Stanley R., Assistant Professor, Ph.D., University of Iowa, 1974.
Prowse, Colin, Assistant Professor, Ph.D., Southampton, 1982.
Sharpe, David M., Associate Professor, Ph.D., Southern Illinois University, 1968.

Geology (College of Science)

Bell, Frank James, Assistant Professor, *Emeritus*, M.S., University of Nebraska, 1941.
Crelling, John C., Associate Professor, Ph.D., The Pennsylvania State University, 1973.
Dutcher, Russell R., Professor and *Chairperson*, Ph.D., The Pennsylvania State University, 1960.
Esling, Steven Paul, Assistant Professor, Ph.D., University of Iowa, 1982.
Frank, Charles Otis, Assistant Professor, Ph.D., Syracuse University, 1973.
Fraunfelter, George H., Professor, Ph.D., University of Missouri, Columbia, 1964.
Guillemette, Renald N., Assistant Professor, Ph.D., Stanford University, 1973.
Harris, Stanley E., Jr., Professor, *Emeritus*, Ph.D., University of Iowa, 1947.
Malinconico, Lawrence L., Assistant Professor, Ph.D., Dartmouth College, 1982.
Marzolf, John E., Associate Professor, Ph.D., University of California at Los Angeles, 1970.
Ritter, Dale F., Professor, Ph.D., Princeton University, 1964.
Utgaard, John E., Professor, Ph.D., Indiana University, 1963.
Zimmerman, Jay, Jr., Associate Professor, Ph.D., Princeton University, 1968.

Graphic Communications (School of Technical Careers)

Ashworth, Edwin Robert, Assistant Professor, Electronic Data Processing, Ph.D., Southern Illinois University, 1972.
Boza, Gertrude, Instructor, *Emerita*, Graphic Design, Fine Arts Degree, Syracuse University, 1932.
Bramlet, James E., Visiting Assistant Professor, Graphic Design, M.A., Western Illinois University, 1970.
Caldwell, Paul N., Associate Professor, Electronics Technology, M.S.Ed., Southern Illinois University, 1965.
Clarke, David D., Associate Professor, M.A., Catholic University, 1981.
Cook, F. Roger, Instructor, Electronic Data Processing, B.S., Southern Illinois University, 1974.
Davey, Jon, Visiting Lecturer, Architectural Technology, B.S., Southern Illinois University, 1979.
Davis, Diane, Assistant Professor, Secretarial and Office Specialties, M.S., Southern Illinois University, 1979.
Davis, L. Noel, Assistant Professor, Architectural Technology, B.S., University of Illinois, 1948.
Delmastro, Edwin V., Instructor, Photographic Production Technology.
Devenport, William R., Lecturer, Electronics Technology, B.S., Illinois State University, 1975.
Einig, Raymond G., Jr., Assistant Professor, Electronic Data Processing, M.S., St. Louis University, 1962.
Ellner, Jack R., Professor, Ph.D., New York University, 1969.
Evans, Candy Duncan, Assistant Professor, Secretarial and Office Specialties, M.S., Southern Illinois University, 1973.
Fisher, Valerie, Assistant Professor, Secretarial and Office Specialties, M.S., Southern Illinois University, 1975.
Ford, George, Lecturer, Electronics Technology, B.S., University of Toledo, 1965.
Gimenez, Atilio M., Assistant Professor, Architectural Technology, M.Arch., University of Buenos Aires, 1964.
Greathouse, Lillian, Associate Professor, Secretarial and Office Specialties, Ph.D., Southern Illinois University, 1981.
Hampton, Robbye Joanna, Assistant Professor, Mathematics, M.S., Southern Illinois University, 1965.
Harre, Paul A., Assistant Professor and *Director*, Graphic Communications, M.S., Southern Illinois University, 1974.

Haun, Melvin L., Sr., Lecturer, Electronics Technology, M.S., Southern Illinois University, 1982.
Hays, Denny M., Assistant Professor, A.I.A. Registered Architect, M. of Arch., University of Utah, Salt Lake City, 1971.
Hertz, Vivienne L., Associate Professor, Graphic Communications, Ph.D., Southern Illinois University, 1980.
Hill, Marvin P., Professor, *Emeritus,* M.S., University of Colorado, 1939.
Humphries, James T., Assistant Professor, Electronics Technology, M.S., Southern Illinois University, 1979.
Jeralds, Lawrence E., Assistant Professor, Electronic Data Processing, B.S., Southern Illinois University, 1972.
Johnson, Byron V., Assistant Professor and *Coordinator,* Electronic Data Processing, Ph.D., Southern Illinois University, 1982.
Johnson, Craig, Assistant Professor, Graphic Design, B.A., Kent State University, 1973.
Lach, Norman, Assistant Professor, Architectural Technology, M.Arch., University of Illinois, 1974.
Ladner, Joel Brooks, Assistant Professor, Architectural Technology, M.Arch., University of Houston, 1984.
Little, Harold E., Associate Professor, *Emeritus,* Architectural Technology, B.S., Pennsylvania State University, 1951.
Mailloux, Lawrence, Assistant Professor, Graphic Design, B.F.A., Rhode Island School of Design, 1947.
McGinnis, R. Guy, Assistant Professor, B. Arch., B.F.A., Pratt Institute, 1973, 1974.
Morgan, Barbara, Assistant Professor and *Coordinator,* Secretarial and Office Specialties, M.S., Southern Illinois University, 1972.
Morse, H. Pauletta, Assistant Professor, Secretarial and Office Specialties, M.S., Southern Illinois University, 1979.
Novak, Mary Ann, Assistant Professor, Secretarial and Office Specialties, M.S., Southern Illinois University, 1979.
Nuetzel, Carolyn, Assistant Professor, M. Arch., Washington University, 1976.
Owens, Terry A., Visiting Lecturer, Architectural Technology, B.S., Southern Illinois University, 1981.
Payne, Michael A., Assistant Professor, Electronic Data Processing, M.S., Southern Illinois University, 1974.
Ramsey, William, Lecturer, Physics, M.S., Southern Illinois University.
Richey, Helen E., Assistant Professor, Graphic Communication, M.S., Southern Illinois University, 1953.
Rutledge, Clifton D., Associate Professor, Architectural Technology, M.Arch., Kansas State University, 1968.
Schoen, Janice S., Assistant Professor, Secretarial and Office Specialties, M.S., University of Illinois, 1970.
Sheets, Leslie P., Associate Professor, Electronics Technology, M.S., Southern Illinois University, 1976.
Shin, Wangshik, Associate Professor, Secretarial and Office Specialties, M.S., Southern Illinois University, 1963.
Shupe, William G., Associate Professor and *Coodinator,* Electronics Technology, M.S., Southern Illinois University, 1977.
Sipes, Philippe, Visiting Instructor, Electronics Technology.
Timm, Judee A., Assistant Professor, Secretarial and Office Specialties, Ph.D., Southern Illinois University, 1983.
Trotter, Gene E., Associate Professor, *Emeritus,* Architectural Technology, B.S., North Dakota State University, 1939.
Vaughn, F. Eugene, Associate Professor, *Emeritus,* Secretarial and Office Specialties, M.S.Ed., Southern Illinois University, 1961.
Walchli, Edward J., Associate Professor and *Coordinator,* Architectural Technology, B. Arch., Yale University, 1949.
White, Robert, Assistant Professor and *Coordinator,* Photographic Production Technology, M.S., Southern Illinois University, 1962.
Yack, John L., Associate Professor and *Coordinator,* Graphic Design, M.F.A., University of Oklahoma, 1959.

Health Education (College of Education)

Aaron, James E., Professor, Ed.D., New York University, 1960.
Boydston, Donald N., Professor and *Chairperson,* Ed.D., Columbia University, 1949.
Bridges, A. Frank, Professor, *Emeritus,* D.H.S., Indiana University, 1952.

Casey, Ralph, Associate Professor, *Emeritus,* Ed.D., Columbia University, 1956.
Denny, Florence E., Associate Professor, *Emerita,* M.A., Columbia University, 1935.
Drolet, Judy C., Assistant Professor, Ph.D., University of Oregon, 1982.
Duncan, David F., Associate Professor, D.P.H., University of Texas at Houston, 1976.
Gold, Robert S., Associate Professor, Ph.D., University of Oregon, 1976.
Grissom, Deward K., Professor, *Emeritus,* Ed.D., Columbia University, 1952.
Hailey, Robert, Instructor, M.Ed., University of Missouri, Columbia, 1959.
Iubelt, George, Instructor, M.S., Indiana University, 1954.
Jones, Richard, Instructor, M.S.Ed., Southern Illinois University, 1966.
Lacey, Ella P., Assistant Professor, Ph.D., Southern Illinois University, 1979.
LeFevre, John R., Professor, Ed.D., Teachers College, Columbia University, 1950.
Lindauer, Larry, Assistant Professor, Ph.D., Southern Illinois Unversity, 1972.
McDermott, Robert J., Assistant Professor, Ph.D., University of Wisconsin, 1981.
Phillips, Frances K., Associate Professor, *Emerita,* M.A., Columbia University, 1940.
Richardson, Charles E., Professor, Ed.D., University of California, Los Angeles, 1959.
Ritzel, Dale, Professor, Ph.D., Southern Illinois University, 1970.
Russell, Robert D., Professor, Ed.D., Stanford University, 1954.
Sliepcevich, Elena M., Professor, D.P.E., Springfield College, 1955.
Steele, Robert, Instructor, M.S.Ed., Southern Illinois University, 1963.
Vaughn, Andrew T., Professor, *Emeritus,* D.Ed., Columbia University, 1958.
Vitello, Elaine, Visiting Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1977.
Vogel, Herbert, Instructor, M.S., Indiana University, 1954.
Zunich, Eileen M., Assistant Professor, Ph.D., Southern Illinois University, 1970.

Higher Education (College of Education)

Adams, Frank C., Professor, *Emeritus,* Ph.D., Southern Illinois University, 1962.
Caldwell, Oliver J., Professor, *Emeritus,* M.S., Oberlin College, 1927.
Casebeer, Arthur L., Professor, Ed.D., Oregon State University, 1963.
Davis, I. Clark, Professor, *Emeritus,* Ed.D., Indiana University, 1956.
Dingerson, Michael R., Associate Professor, Ph.D., Southern Illinois University, 1974.
Graham, Jack W., Professor and *Chairperson,* Ph.D., Purdue University, 1951.
Grinnell, John E., Professor, *Emeritus,* Ph.D., Stanford University, 1934.
Hawley, John B., Professor, Ph.D., University of Michigan, 1957.
Jung, Loren B., Professor, *Emeritus,* Ph.D., Southern Illinois University, 1969.
Keene, Roland, Professor, *Emeritus,* Ed.D., Washington University, 1962.
King, John E., Professor, *Emeritus,* Ph.D., Cornell University, 1941.
Morrill, Paul H., Professor, *Emeritus,* Ph.D., Northwestern University, 1956.
Spees, Emil R., Associate Professor, Ph.D., Claremont Graduate School, 1969.
Stonewater, Barbara B., Visiting Assistant Professor, Ph.D., Michigan State University, 1977.
Swinburne, Bruce R., Associate Professor, Ed.D., Indiana University, 1970.
Tolle, Donald J., Professor, Ed.D., Florida State University, 1957.
Zimmerman, Elwyn, Assistant Professor, Ph.D., Michigan State University, 1963.

History (College of Liberal Arts)

Allen, Howard W., Professor and *Chairperson,* Ph.D., University of Washington, 1959.
Ammon, Harry, Professor, *Emeritus,* Ph.D., University of Virginia, 1948.
Barton, H. Arnold, Professor, Ph.D., Princeton University, 1962.
Batinski, Michael C., Assistant Professor, Ph.D., Northwestern University, 1969.
Brehm, Donald L., Assistant Professor, Ph.D., St. Louis University, 1968.
Carrott, M. Browning, Associate Professor, Ph.D., Northwestern University, 1966.
Conrad, David E., Professor, Ph.D., University of Oklahoma, 1962.
Detwiler, Donald S., Professor, Dr. Phil., Göttingen University, Germany, 1961.
Dotson, John E., Assistant Professor, Ph.D., Johns Hopkins University, 1969.
Fladeland, Betty L., Professor, Ph.D., University of Michigan, 1952.
Gardiner, C. Harvey, Professor, *Emeritus,* Ph.D., University of Michigan, 1945.
Gold, Robert L., Professor, Ph.D., University of Iowa, 1964.
Kuo, Ping-Chia, Professor, *Emeritus,* Ph.D., Harvard University, 1933.
Murphy, James B., Associate Professor, Ph.D., Louisiana State University, 1968.
O'Day, Edward J., Assistant Professor, A.M., Indiana University, 1956.
Shelby, Lon R., Professor, Ph.D., University of North Carolina, 1962.

Simon, John Y., Professor, Ph.D., Harvard University, 1961.
Vyverberg, Henry S., Professor, Ph.D., Harvard University, 1950.
Werlich, David P., Professor, Ph.D., University of Minnesota, 1968.
Wright, John I., Associate Professor, *Emeritus,* A.M., University of Chicago, 1933.
Wu, Tien-Wei, Professor, Ph.D., University of Maryland, 1965.
Zucker, Stanley, Associate Professor, Ph.D., University of Wisconsin, 1968.

Human Development (College of Human Resources)

Barnes, Mary Louise, Assistant Professor, *Emerita,* M.S., Iowa State College, 1931.
Quigley, Eileen, Professor, *Emerita,* Ed.D., University of Missouri, 1947.
Taylor, Jan Cooper, Assistant Professor, Ph.D., Texas Woman's University, 1979.
Zunich, Michael, Professor, Ph.D., Florida State University, 1959.

Journalism (College of Communications and Fine Arts)

Atwood, L. Erwin, Professor, Ph.D., University of Iowa, 1965.
Brown, George C., Professor, Ph.D., Southern Illinois University, 1963.
Bullion, Stuart, Assistant Professor, Ph.D., University of Minnesota, 1981.
Clayton, Charles C., Professor, *Emeritus,* B.J., University of Missouri, 1925.
Ford, James L. C., Professor, *Emeritus,* Ph.D., University of Minnesota, 1948.
Frazier, Mary K., Assistant Professor, *Emerita,* M.S., Southern Illinois University, 1965.
Gruny, C. Richard, Assistant Professor, J.D., University of Illinois, 1959.
Harmon, William M., Adjunct Instructor, M.S., Oklahoma State University, 1965.
Hart, Jim Allee, Professor, *Emeritus,* Ph.D., University of Missouri, 1959.
Long, Howard R., Professor, *Emeritus,* Ph.D., University of Missouri, 1948.
Lyons, William H., Assistant Professor, *Emeritus,* M.A., University of Colorado, 1935.
McCoy Ralph E., Professor, *Emeritus,* Ph.D., University of Illinois, 1956.
McKerns, Joseph, Assistant Professor, Ph.D., University of Minnesota, 1979.
Nevious, William, Instructor, M.S., Southern Illinois University, 1979.
Rice, W. Manion, Associate Professor, Ph.D., Southern Illinois University, 1967.
Riffe, Daniel, Assistant Professor, Ph.D., University of Tennessee, 1980.
Riffe, Florence C., Assistant Professor, Ph.D., University of Tennessee, 1982.
Stone, Vernon A., Professor and *Director,* Ph.D., University of Wisconsin, 1966.
Stonecipher, Harry W., Associate Professor, Ph.D., Southern Illinois University, 1971.
Taylor, John C., Lecturer, M.A., University of Alabama, 1960.
Whitby, Gary, Assistant Professor, Ph.D., University of Iowa, 1984.

Library

Bauner, Ruth E., Associate Professor, Ph.D., Southern Illinois University, 1978.
Baysinger, Patricia, Researcher, B.A., Southern Illinois University, 1970.
Bedient, Douglas, Associate Professor, Ph.D., Southern Illinois University, 1971.
Black, George W., Jr., Professor, M.S.L.S., Columbia University, 1966.
Bowen, Louisa H., Assistant Professor, M.S.L.S., Wayne State University, 1974.
Boydston, Jo Ann, Professor, Ph.D., Columbia University, 1950.
Brown, F. Dale, Associate Professor, Ph.D., Southern Illinois University, 1978.
Chervinko, James S., Assistant Professor, M.S.L.S., University of Illinois, 1973.
Clark, Charlotte R., Assistant Professor, A.B.L.S., University of Michigan, 1940.
Cohn, Alan M., Professor, M.S., University of Illinois, 1955.
Cook, Margaret K., Assistant Professor, Ph.D., Southern Illinois University, 1977.
Coscarelli, William C., Associate Professor, Ph.D., Indiana University, 1977.
Cox, Shelley M., Assistant Professor, M.A.L.S., University of Chicago, 1973.
Crane, Lilly E., Assistant Professor, M.A.L.S., University of Michigan, 1967.
Fahey, Kathleen G., Assistant Professor, M.L.S., University of Minnesota, 1968.
Fox, James W., Assistant Professor, M.A., University of North Carolina, 1974.
Fox, Mary Anne, Assistant Professor, M.S.L.S., University of North Carolina, 1975.
Harwood, Judith Ann, Assistant Professor, Ph.D., Southern Illinois University, 1981.
Hildreth, Margaret, H., Assistant Professor, M.L.S., State University of New York at Geneseo, 1970.
Holliday, Charles L., Assistant Professor, M.S., University of Illinois, 1964.
Hostetler, Jerry, Assistant Professor, Ph.D., Southern Illinois University, 1977.

Hutton, Betty Jean, Assistant Professor, M.S. in Ed., Southern Illinois University, 1968.
Isbell, Mary K., Assistant Professor, M.S., Southern Illinois University, 1971.
Jenkins, Darrell L., Associate Professor, M.A., New Mexico State University, 1976.
Keel, Robert L., Assistant Professor, M.A.L.S., George Peabody College for Teachers, 1961.
Kilpatrick, Thomas L., Assistant Professor, Ph.D., George Peabody College, 1982.
Koch, David V., Associate Professor, M.A., Southern Illinois University, 1963.
Lampman, Wilma L., Assistant Professor, M.S., Southern Illinois University, 1962.
Levine, Barbara, Researcher, M.A., Northwestern University, 1960.
Lockrem, Emily Jane, Assistant Professor, M.A., University of Wisconsin, 1976.
Marquez-Sterling, Carlos, Assistant Professor, D.L., Havana University, 1952.
Marrero, Carlos E., Instructor, M.A., University of Denver, 1961.
Martinsek, Catherine W., Researcher, M.A., University of California at Los Angeles, 1950.
Matson, Susan A., Assistant Professor, Ph.D., University of Wisconsin, 1972.
Matthews, Elizabeth W., Associate Professor, Ph.D., Southern Illinois University, 1972.
Matthews, Sidney E., Associate Professor, M.S., University of Illlinois, 1952.
Morrow, Carolyn, Associate Professor, M.L.S., University of Illinois, 1977.
Otto, Theophil M., Associate Professor, Ph.D., Southern Illinois University, 1979.
Person, Roland C., Associate Professor, Ph.D., Southern Illinois University, 1982.
Peterson, Kenneth G., Professor, Ph.D., University of California at Berkley, 1968.
Pixley, Lorene, Assistant Professor, M.S., University of Illinois, 1960.
Poteet, Susan S., Assistant Professor, M.L.S., George Peabody College, 1970.
Poulos, Kathleen E., Researcher, M.S. in Ed., Southern Illinois University, 1969.
Ray, Jean Meyer, Associate Professor, M.A., Southern Illinois University, 1976.
Russell, Thyra K., Assistant Professor, M.A., Northern Illinois University, 1972.
Scott, W. Wiley, Assistant Professor, M.S.L.S., Western Reserve University, 1959.
Sharpe, Anne S., Researcher, B.F.A., Syracuse University, 1960.
Shrock, Sharon A., Assistant Professor, Ph.D., Indiana University, 1979.
Simon, Harriet F., Researcher, Ed.M., Harvard Graduate School of Education, 1956.
Simon, John Y., Professor, Ph.D., Harvard University, 1961.
Sims, Anne E., Instructor, M.A., University of Louisville, 1973.
Starns, Matilda T., Assistant Professor, M.S., University of Illinois, 1963.
Stonewater, Jerry K., Assistant Professor, Ph.D., Michigan State University, 1977.
Stubbs, Walter R., Assistant Professor, M.A., Northern Illinois University, 1968.
Tax, Andrew T., Assistant Professor, M.L.S., Charles University, Prague, 1962.
Tharp, Charles C., Instructor, M.S.L.S., University of Illinois, 1951.
Walsh, Bridget A., Researcher, M.A., Catholic University of America, 1967.
Wilson, Betty Ruth, Assistant Professor, M.A., George Peabody College for Teachers, 1957.
Wilson, David L., Research Associate, Ph.D., University of Tennessee, 1974.
Wood, Don E., Assistant Professor, M.S., University of Illinois, 1965.
Woodbridge, Annie S., Researcher, M.A., George Peabody College for Teachers, 1936.
Wursten, Richard B., Assistant Professor, Ph.D., University of Wisconsin at Madison, 1980.

Linguistics (College of Liberal Arts)

Angelis, Paul J., Associate Professor and *Chairperson*, Ph.D., Georgetown University, 1968.
Carrell, Patricia L., Professor, Ph.D., University of Texas at Austin, 1966.
Gilbert, Glenn G., Professor, Ph.D., Harvard University, 1963.
Hill, Beverly G., Assistant Professor, Ph.D., University of Texas at Austin, 1972.
Nathan, Geoffrey S., Assistant Professor, Ph.D., University of Hawaii, 1978.
Nguyen, Dinh-Hoa, Professor, Ph.D., New York University, 1956.
Parish, Charles, Professor, Ph.D., University of New Mexico, 1959.
Perkins, Allen Kyle, Assistant Professor, Ph.D., University of Michigan at Ann Arbor, 1976.
Redden, James E., Professor, Ph.D., Indiana University, 1965.

Marketing (College of Business and Administration)

Adams, Kendall A., Professor, Ph.D., Michigan State University, 1962.
Andersen, R. Clifton, Professor, D.B.A., Indiana University, 1960.
Anderson, Carol M., Assistant Professor, Ph.D., Texas A & M University, 1981.
Barham, Crevolyn, Lecturer, M.S., Southern Illinois University, 1983.

Bruner, Gordon C. II, Assistant Professor, Ph.D., North Texas State University, 1983.
Carlson, Lorry, Lecturer, M.B.A., Southern Illinois University, 1982.
Choe, Sang T., Assistant Professor, D.B.A., Mississippi State University, 1984.
Dommermuth, William P., Professor and *Chairperson,* Ph.D., Northwestern University, 1964.
Glynn, Karen, Instructor, M.B.A., Southern Illinois University, 1982.
Greenwalt, Shanna, Lecturer, M.B.A., Southern Illinois University, 1982.
Heischmidt, Kenneth A., Lecturer, Ph.D., Southern Illinois University, 1983.
Hindersman, Charles H., Professor, D.B.A., Indiana University, 1959.
McDonald, Patricia A., Lecturer, M.B.A., Southern Illinois University, 1981.
Moore, James R., Assistant Professor, Ph.D., University of Illinois, 1972.
Mulvey, Maureen, Lecturer, M.B.A., Southern Illinois University, 1984.
Perry, Donald L., Associate Professor, Ph.D., University of Illinois, 1966.
Pritchett, Allen, Lecturer, M.A., Webster College, 1978.
Summey, John H., Associate Professor, D.B.A., Arizona State University, 1974.
Taylor, Ronald K., Instructor, Ed.S., Austin Peay State University, 1980.
Veech, Pattie J., Lecturer, M.B.A., Southern Illinois University, 1983.
Viswanthan, R., Assistant Professor, Ph.D., Southern Illinois University, 1982.

Mathematics (College of Liberal Arts)

Baartmans, Alphonse H., Professor and *Chairperson,* Ph.D., Michigan State University, 1967.
Beckemeyer, Imogene C., Assistant Professor, M.A., Southern Illinois University, 1952.
Black, Amos H., Professor, *Emeritus,* Ph.D., Cornell University, 1932.
Burton, Theodore A., Professor, Ph.D., Washington State University, 1964.
Crenshaw, James A., Associate Professor, Ph.D., University of Illinois, 1967.
Danhof, Kenneth, Professor, Ph.D., Purdue University, 1969.
Dharmadhikari, Sudhakar, Professor, Ph.D., University of California at Berkeley, 1962.
Earnest, Andrew, Associate Professor, Ph.D., Ohio State University, 1975.
Elston, George, Assistant Professor, M.S., University of Wisconsin, 1949.
Feinsilver, Philip, Associate Professor, Ph.D., New York University, 1975.
Fitzgerald, Robert, Assistant Professor, Ph.D., University of California at Los Angeles, 1980.
Foland, Neal E., Professor, Ph.D., University of Missouri, 1961.
Gates, Leslie D., Associate Professor, Ph.D., Iowa State University, 1952.
Gregory, John, Professor, Ph.D., University of California at Los Angeles, 1969.
Grimmer, Ronald C., Professor, Ph.D., University of Iowa, 1967.
Hall, Dilla, Associate Professor, *Emeritus,* Ph.D., St. Louis University, 1955.
Hooker, John W., Associate Professor, Ph.D., University of Oklahoma, 1967.
Hunsaker, Worthen N., Associate Professor, Ph.D., Washington State University, 1966.
Jeyaratnam, Sakthivel, Assistant Professor, Ph.D., Colorado State University, 1978.
Kammler, David, Professor, Ph.D., University of Michigan, 1971.
Kirk, Ronald B., Professor, Ph.D., California Institute of Technology, 1968.
Koch, Charles, Assistant Professor, Ph.D., University of Illinois, 1961.
Kuipers, Lauwerens, Professor, *Emeritus,* Ph.D., Vrije Universiteit (Amsterdam), 1947.
Langenhop, Carl E., Professor, Ph.D., Iowa State University, 1948.
Mark, Abraham M., Professor, *Emeritus,* Ph.D., Cornell University, 1947.
Maxwell, Charles, Professor, Ph.D., University of Illinois, 1955.
McDaniel, Wilbur C., Professor, *Emeritus,* Ph.D., University of Wisconsin, 1939.
Milman, Mario, Assoicate Professor, Ph.D., Australian National University, 1978.
Moore, Robert A., Associate Professor, Ph.D., Indiana University, 1962.
Olmsted, John M. H., Professor, *Emeritus,* Ph.D., Princeton University, 1940.
Paine, Thomas B., Assistant Professor, Ph.D., University of Oregon, 1966.
Panchapakesan, S., Professor, Ph.D., Purdue University, 1969.
Parker, George D., Associate Professor, Ph.D., University of California at San Diego, 1971.
Patula, William T., Associate Professor, Ph.D., Carnegie-Mellon University, 1972.
Pedersen, Franklin D., Associate Professor, Ph.D., Tulane University, 1967.
Pedersen, Katherine, Associate Professor, Ph.D., Tulane University, 1969.
Pericak-Spector, Kathleen, Assistant Professor, Ph.D., Carnegie-Mellon University, 1980.
Redmond, Donald, Associate Professor, Ph.D., University of Illinois, 1976.
Robinson, Robert, Professor, Ph.D., Cornell University, 1966.
Simion, Rodica, Assistant Professor, Ph.D., University of Pennsylvania, 1981.
Skalsky, Michael, Professor, D.Nat.Sc., University of Göttingen, 1949.
Slechticky, James L., Instructor, *Emeritus,* M.S., Washington University, 1940.
Snyder, Herbert H., Professor, Ph.D., Lehigh University, 1965, Ph.D., University of South Africa, 1972.

Spector, Scott J., Associate Professor, Ph.D., Carnegie-Mellon University, 1978.
Starks, Thomas H., Professor, Ph.D., Virginia Polytechnic Institute, 1959.
Upham, Mary, Assistant Professor, Ph.D., McGill University, 1977.
Wilson, Joseph C., Professor, *Emeritus*, Ph.D., Louisiana State University, 1954.
Wimp, Larry L., Assistant Professor, *Emeritus*, M.A., University of Missouri, 1940, M.S., Southern Illinois University, 1959.
Wright, Alice K., Assistant Professor, *Emerita*, M.A., University of Illinois, 1925.
Yucas, Joseph, Associate Professor, Ph.D., Pennsylvania State University, 1978.
Zeman, Marvin, Associate Professor, Ph.D., New York University (Courant Institute), 1974.

Mechanical Engineering and Energy Processes

(College of Engineering and Technology)

Chen, Juh W., Professor and *Chairperson*, Ph.D., University of Illinois, 1959.
Cook, Echol E., Professor, Oklahoma State University, 1970.
DeVantier, Bruce, Assistant Professor, University of California at Davis, 1983.
Helmer, Wayne Allen, Associate Professor, Purdue University, 1974.
Hesketh, Howard B., Professor, Ph.D., Pennsylvania State University, 1968.
Jefferson, Thomas B., Professor, Ph.D., Purdue University, 1955.
Kent, Albert C., Professor, Ph.D., Kansas State University, 1968.
Lalvani, S.B., Assistant Professor, University of Connecticut, 1982.
Miyasaka, Kenji, Assistant Professor, University of Tokyo, 1982.
Muchmore, Charles B., Professor, Ph.D., Southern Illinois University, 1970.
O'Brien, William S., Assistant Professor, Ph.D., West Virginia University, 1972.
Rajan S., Associate Professor, Ph.D., University of Illinois, 1970.
Tempelmeyer, Kenneth E., Professor, Ph.D., University of Tennessee, 1969.
Wapner, Philip G., Associate Professor, Ph.D., University of Pennsylvania, 1970.

Microbiology (College of Science)

Borgia, Peter, Associate Professor, Ph.D., University of Illinois, 1973.
Brewer, Gregory, Associate Professor, Ph.D., University of California, 1972.
Caster, John, Assistant Professor, Ph.D., St. Louis University, 1968.
Clark, David, Assistant Professor, Ph.D., University of Bristol, Bristol, England, 1976.
Cooper, Morris D., Associate Professor, Ph.D., University of Georgia at Athens, 1971.
Jackson, Robert, Professor, Ph.D., Purdue University, 1963.
Lev, Meir, Professor, University of Reading (England), 1957.
Lindegren, Carl C., Professor, *Emeritus*, Ph.D., California Institute of Technology, 1931.
Madigan, Michael T., Assistant Professor, Ph.D., University of Wisconsin, 1976.
Martinko, John M., Assistant Professor, Ph.D., State University of New York at Buffalo, 1978.
McConnachie, Peter, Associate Professor, Ph.D., University of Alberta, Canada, 1970.
Moticka, Edward A., Associate Professor, Ph.D., University of Illinois at the Medical Center, 1970.
Myers, Walter L., Professor, D.V.M., Ph.D., University of Wisconsin, 1961.
Parker, Jack M., Associate Professor and *Acting Chairperson*, Ph.D., Purdue University, 1973.
Rouhandeh, Hassan, Professor, Ph.D., Kansas State University, 1959.
Rowan, Dighton F., Professor, Ph.D., Stanford University, 1954.
Shechmeister, Isaac L., Professor, *Emeritus*, Ph.D., University of California at Berkeley, 1949.
Tewari, Ram, Professor, D.V.M., Agra University, India, 1960; Ph.R., Ohio State University, 1966.

Mining Engineering (College of Engineering and Technology)

Caudle, Rodney D., Associate Professor and *Acting Chairperson*, M.S., University of Illinois, 1952.
Chugh, Yoginder P., Professor, Ph.D., Pennsylvania State University, 1971.
Sevim, Hasan, Assistant Professor, Ph.D., Columbia University, 1984.
Sinha, Atmesh K., Associate Professor, Ph.D., University of Sheffield, 1963.

Music (College of Communications and Fine Arts)

Allison, Robert, Instructor, M.M., University of Illinois, 1979.
Barwick, Steven, Professor, Ph.D., Harvard University, 1949.
Bateman, Marianne Webb, Professor, M.Mus., University of Michigan, 1959.
Beattie, Donald, Assistant Professor, M.Mus., University of Colorado, 1977.
Bergt, Robert, Associate Professor, S.T.M., Concordia Seminary, 1958.
Bottje, Will Gay, Professor, *Emeritus,* A.Mus.D., Eastman School of Music, 1955.
Breznikar, Joseph, Assistant Professor, M.Mus., University of Akron, 1977.
Fligel, Charles, Assistant Professor, M.M., University of Kentucky, 1966.
Grizzell, Mary Jane, Assistant Professor, *Emerita,* M.Mus., Eastman School of Music, 1943.
Hammond, William, Associate Professor, Ed.D., Boston University, 1976.
Hanes, Michael, Associate Professor, M.M.E., Southern Illinois University, 1965.
Hartline, Elisabeth, Assistant Professor, *Emerita,* M.Mus., Northwestern University, 1936.
House, Mary Elaine Wallace, Professor, *Emerita,* M.Mus., University of Illinois, 1954.
Hunt, C. B., Jr., Professor, Ph.D., University of California, Los Angeles, 1949.
Hussey, George, Professor, M.A.Ed., Washington University, 1963.
Kingsbury, Robert, Associate Professor, *Emeritus,* M.Mus., Northwestern University, 1952.
Mandat, Eric, Assistant Professor, M.M., Yale University, 1981.
McHugh, Catherine, Professor, *Emerita,* Ed.D., Columbia University, 1959.
Mellado, Daniel, Assistant Professor, Ph.D., Michigan State University, 1979.
Mueller, Robert, Professor, Ph.D., Indiana University, 1954.
Olsson, Phillip, Professor, *Emeritus,* M.Mus., Chicago Conservatory, 1949.
Poulos, Helen, Associate Professor, D.M., Indiana University, 1971.
Resnick, Robert, Professor, *Emeritus,* M.Mus., Wichita State University, 1949.
Romersa, Henry, Visiting Associate Professor, M.M.Ed., Oberlin College, 1955.
Roubos, Robert, Professor and *Director,* D.M.A., University of Michigan, 1966.
Simmons, Margaret, Assistant Professor, M.M., University of Illinois, 1976.
Stemper, Frank, Assistant Professor, Ph.D., University of California, 1981.
Taylor, Charles, Associate Professor, *Emeritus,* Ed.D., Columbia University, 1950.
Tomasz, Melanie, Assistant Professor, M.M., Northwestern University, 1973.
Underwood, Jervis, Professor, Ph.D., North Texas State University, 1970.
Weiss, Robert, Assistant Professor, M.S., University of Illinois, 1974.
Werner, Kent, Associate Professor, Ph.D., University of Iowa, 1966.
Wharton, John, Associate Professor, *Emeritus,* M.Mus., American Conservatory, 1940.

Office of Teacher Education (College of Education)

Buser, Margaret, Instructor, M.S. Ed., Indiana University, 1966.
Cherry, Aveniel A., Lecturer, M.S. in Ed., Southern Illinois University, 1962.
Giles, M. Frances, *Coordinator,* Teacher Education Services, M.A., Southern Illinois University, 1969.
Jenkins, Jeannette, Lecturer, M.Ed., Pennsylvania State University, 1948.
Moore, Eryn E., Assistant Professor, Ph.D., Southern Illinois University, 1976.
Mueller, Ruth M., Academic Adviser, B.S., Milwaukee State Teachers College, 1944.
Roy, Thomas Michael, Lecturer, M.S. in Ed., Southern Illinois University, 1975.
Turner, Doris Sewell, Lecturer, *Emerita,* M.S. in Ed., Southern Illinois University, 1949.

Philosophy (College of Liberal Arts)

Clarke, David S., Jr., Professor, Ph.D., Emory University, 1964.
Diefenbeck, James A., Professor and *Chairperson,* Ph.D., Harvard University, 1950.
Eames, Elizabeth R., Professor, Ph.D., Bryn Mawr College, 1951.
Eames, S. Morris, Professor, Ph.D., University of Chicago, 1958.
Frondizi, Risieri, Professor *Emeritus,* Ph.D., National University of Mexico, 1950.
Gillan, Garth J., Associate Professor, Ph.D., DuQuesne University, 1966.
Hahn, Lewis E., Professor, *Emeritus,* Ph.D., University of California, 1939.
Hahn, Robert A., Assistant Professor, Ph.D., Yale University, 1976.
Hayward, John, Professor, Ph.D., University of Chicago, 1949.
Howie, John, Associate Professor, Ph.D., Boston University, 1965.

Johnson, Mark, Assistant Professor, Ph.D., University of Chicago, 1977.
Kelly, Matthew J., Associate Professor, Ph.D., University of Notre Dame, 1963.
King, Sallie Behn, Assistant Professor, Temple University, 1981.
McClure, George T., Professor, Ph.D., Ohio State University, 1958.
Moore, Willis, Professor, *Emeritus,* Ph.D., University of California, 1936.
Plochmann, George Kimball, Professor, *Emeritus,* Ph.D., University of Chicago, 1950.
Schedler, George, Associate Professor, Ph.D., University of California at San Diego, 1973.
Schilpp, Paul A., Professor, *Emeritus,* Ph.D., Stanford University, 1936.
Tyman, Stephen, Assistant Professor, University of Toronto, 1980.

Physical Education (College of Education)

Ackerman, Kenneth, Assistant Professor, M.A., Michigan State University, 1959.
Baker, John A.W., Assistant Professor, Ph.D., University of Iowa, 1980.
Blackman, Claudia J., Instructor, M.S.Ed., Southern Illinois University, 1968.
Brechtelsbauer, Kay M., Instructor, Ph.D., Southern Illinois University, 1980.
Carroll, Peter, Assistant Professor, Ph.D., Pennsylvania State University, 1970.
Davies, Dorothy R., Professor, *Emerita,* Ed.D., University of Cincinnati, 1944.
Dirks, W. Edward, Instructor, M.S., Southern Illinois University, 1964, Certificate, Physical Therapy, Ohio State University, 1965.
Fischman, Mark, Assistant Professor, Ph.D., Pennsylvania State University, 1983.
Franklin, C. C., Associate Professor, *Emeritus,* M.S.Ed., Indiana University, 1946.
Franklin, Marcile, Instructor, M.S.Ed., Indiana University, 1944.
Good, Larry, Associate Professor, Ph.D., Temple University, 1968.
Hamill, Joseph, Assistant Professor, Ph.D., University of Oregon, 1981.
Hartzog, Lewis, Instructor, M.E., Colorado State University, 1954.
Idoine, Sallie, Assistant Professor, M.M., Florida State University, 1972.
Illner, Julee Ann, Instructor, M.S.Ed., Southern Illinois University, 1968.
Klagge, Connie, Instructor, M.A., University of Iowa, 1980.
Knowlton, Ronald, Professor, Ph.D., University of Illinois, 1961.
Kostalik, Linda, Assistant Professor, M.F.A., University of California at Irvine, 1973.
Long, Linn, Instructor, M.S., University of Colorado, 1967.
Meade, William, Assistant Professor, M.A.Ed., University of North Carolina, 1950.
Okita, Ted, Associate Professor, M.A., Northwestern University, 1964.
Potter, Marjorie Bond, Professor, *Emerita,* Ph.D., University of Southern California, 1958.
Shea, Edward, Professor, Ph.D., New York University, 1955.
Stotlar, John, Associate Professor, *Emeritus,* D.P.Ed., Indiana University, 1954.
Thirer, Joel, Associate Professor, Ph.D., Florida State University, 1976.
Thorpe, Jo Anne Lee, Professor, Ph.D., Texas Woman's University, 1964.
Ulrich, Dale A., Assistant Professor, Ph.D., Michigan State University, 1980.
Wade, Michael G., Professor and *Chairperson,* Ph.D., University of Illinois, 1970.
West, Charlotte, Professor, Ph.D., University of Wisconsin, 1969.
Zimmerman, Helen, Professor, *Emerita,* Ph.D., University of Wisconsin, 1951.

Physics and Astronomy (College of Science)

Arvin, Martin J., Professor, *Emeritus,* Ph.D., University of Illinois, 1934.
Borst, Walter L., Professor, Ph.D., University of California, Berkeley, 1968.
Bose, Subir K., Professor, Ph.D., University of Allahabad, India, 1967.
Brasefield,, Charles J., Professor, *Emeritus,* Ph.D., Princeton University, 1927.
Cutnell, John D., Professor, Ph.D., University of Wisconsin, 1967.
de Llano, Manuel, Visiting Professor, Ph.D., Catholic University of America, 1965.
Gruber, Bruno J., Professor, Ph.D., University of Vienna, Austria, 1962.
Henneberger, Walter C., Professor, Ph.D., Göttingen University, Germany, 1959.
Johnson, Kenneth W., Associate Professor, Ph.D., Ohio State University, 1967.
Malik, F. Bary, Professor and *Chairperson,* Ph.D., Goettingen University, West Germany, 1958.
Nickell, William E., Professor, Ph.D., University of Iowa, 1954.
Sanders, Frank C., Jr., Associate Professor, Ph.D., University of Texas, 1968.
Saporoschenko, Mykola, Professor, Ph.D., Washington University, 1958.
Telschow, Kenneth L., Associate Professor, Ph.D., University of California, Los Angeles, 1973.
Watson, Richard E., Professor, *Emeritus,* Ph.D., University of Illinois, 1938.
Young, Otis B., Professor, *Emeritus,* Ph.D., University of Illinois, 1928.
Zitter, Robert N., Professor, Ph.D., University of Chicago, 1962.

Physiology (School of Medicine)

Banerjee, Chandra M., Professor, Ph.D., Medical School of Virginia, Richmond, 1967.
Bartke, Andrzej, Professor, Ph.D., University of Kansas, 1965.
Browning, Ronald A., Associate Professor, Ph.D., University of Illinois Medical Center, Chicago, 1971.
Caspary, Donald M., Associate Professor, Ph.D., New York University, 1971.
Cline, William H., Professor, Ph.D., West Virginia University, 1965.
Coulson, L. Richard, Associate Professor, Ph.D., University of Toronto, 1971.
Cox, Thomas C., Assistant Professor, Ph.D., University of Arizona, 1979.
Curl, James L., Assistant Professor, D.V.M., Oklahoma State University, 1979.
Dunagan, Tommy T., Professor, Ph.D., Purdue University, 1960.
Dunaway, George A., Associate Professor, Ph.D., University of Oklahoma, 1970.
Ellert, Martha S., Associate Professor, Ph.D., University of Miami, 1967.
Faingold, Carl L., Associate Professor, Ph.D., Northwestern University, Chicago, 1970.
Falvo, Richard E., Associate Professor, Ph.D., University of Wyoming, 1970.
Foote, Florence M., Professor, *Emerita*, Ph.D., University of Iowa, 1940.
Giacobini, Ezio, Professor, M.D., Ph.D., Karolinska Institute, Stockholm, 1959.
Hansen, Barbara, Professor, Ph.D., University of Washington, Seattle, 1971.
Hunter, William S., Associate Professor, Ph.D., Michigan State University, 1971.
Kaplan, Harold M., Professor, *Emeritus*, Ph.D., Harvard University, 1933.
Lee, Tony J-F., Associate Professor, Ph.D., West Virginia University, Morgantown, 1973.
Miller, Donald M., Professor, Ph.D., University of Illinois, 1965.
Myers, J. Hurley, Associate Professor, Ph.D., University of Tennessee, 1969.
Nequin, Lynn G., Associate Professor, Ph.D., University of Illinois Medical Center, Chicago, 1970.
Nickols, G. Allen, Assistant Professor, Ph.D., University of Missouri, Columbia, 1977.
Peterson, Rudolph N., Professor, Ph.D., University of Florida, Gainesville, 1965.
Richardson, Alfred W., Professor, Ph.D., University of Iowa, 1949.
Russell, Lonnie, Professor, Ph.D., University of Nebraska, 1974.
Rybak, Leonard, Assistant Professor, Ph.D., University of Minnesota, 1979.
Smith, Douglas, Assistant Professor, Ph.D., Kansas State University, 1977.
Sollberger, Arne, Professor, M.D., Caroline Institute, Sweden, 1957.
Somani, Satu M., Associate Professor, Ph.D., Liverpool University, Liverpool, England 1967.
Strack, Louis E., Associate Professor, D.V.M., University of Illinois, 1961.
Su, Che, Professor, Ph.D., University of California, Los Angeles, 1965.
Wade, David R., Associate Professor, Ph.D., Cambridge University, England, 1967.
Yau, William M., Associate Professor, Ph.D., Medical College of Virginia, 1971.

Plant and Soil Science (School of Agriculture)

Canagier, Mevlut, Assistant Professor, Ph.D., University of Michigan, 1980.
Caster, Alfred B., Professor, *Emeritus*, Ph.D., University of Arizona, 1941.
Coorts, Gerald D., Professor and *Chairperson*, Ph.D., University of Illinois, 1964.
Elkins, Donald M., Professor, Ph.D., Auburn University, 1967.
Hillyer, Irvin G., Professor, Ph.D., Michigan State University, 1956.
Hilen, Andrew G., Assistant Professor, Ph.D., Cornell University, 1983.
Jones, Joe H., Professor, Ph.D., Ohio State University, 1960.
Kapusta, George, Professor, Ph.D., Southern Illinois University, 1975.
Klubek, Brian P., Associate Professor, Ph.D., Utah State University, 1977.
Leasure, J. K., Professor, *Emeritus*, Ph.D., University of Illinois, 1953.
Mowry, James B., Professor, *Emeritus*, Ph.D., Rutgers University, 1951.
Myers, Oval, Jr., Professor, Ph.D., Cornell University, 1963.
Olsen, Farrel J., Professor, Ph.D., Rutgers University, 1961.
Portz, Herbert L., Professor, Ph.D., University of Illinois, 1954.
Preece, John E., Assistant Professor, Ph.D., University of Minnesota, 1980.
Stucky, Donald J., Professor, Ph.D., Purdue University, 1963.
Taylor, Bradley H., Assistant Professor, Ph.D., Ohio State University, 1982.
Tucker, Lowell R., Associate Professor, *Emeritus*, Ph.D., Massachusetts State College, 1940.
Tweedy, James A., Professor, Ph.D., Michigan State University, 1966.
Varsa, Edward C., Assistant Professor, Ph.D., Michigan State University, 1970.

Political Science (College of Liberal Arts)

Baker, John H., Associate Professor, Ph.D., Princeton University, 1961.
Bhattacharyya, Jnanabrota, Associate Professor, Ph.D., University of Delhi, 1969.
Chou, Ikua, Professor, Ph.D., Fletcher School of Law and Diplomacy, 1949.
Dale, Richard, Associate Professor, Ph.D., Princeton University, 1962.
Derge, David Richard, Professor, Ph.D., Northwestern Unversity, 1955.
Desai, Uday, Associate Professor, Ph.D., University of Pittsburgh, 1973.
Ervin, Osbin L., Associate Professor, Ph.D., University of Tennessee, 1974.
Foster, John L., Associate Professor and *Chairperson*, Ph.D., University of Minnesota, 1971.
Garner, William R., Associate Professor, Ph.D., Tulane University, 1963.
Hanson, Earl Thomas, Professor, *Emeritus*, Ph.D., University of Illinois, 1948.
Hardenbergh, William, Professor, Ph.D., University of Illinois, 1954.
Jackson, John S., III, Professor, Ph.D., Vanderbilt University, 1971.
Jacobini, Horace B., Professor, Ph.D., University of Kansas, 1951.
Kamarasy, Egon K., Assistant Professor, Doctor Politics, Budapest University, Hungary, 1942.
Klingberg, Frank L., Professor, *Emeritus*, Ph.D., University of Chicago, 1938.
Kosaki, Liane, Assistant Professor, Ph.D., University of Michigan, 1984.
Landecker, Manfred, Associate Professor, Ph.D., Johns Hopkins University, 1965.
Mace, George R., Associate Professor, Ph.D., Claremont Graduate School, 1963.
Mason, Ronald M., Associate Professor, Ph.D., University of Iowa, 1976.
McGrath, Robert A., Professor, *Emeritus*, Ph.D., University of Iowa, 1947.
Melone, Albert, Associate Professor, Ph.D., University of Iowa, 1972.
Miller, Roy E., Associate Professor, Ph.D., University of Illinois, 1971.
Morton, Ward M., Professor, *Emeritus*, Ph.D., University of Texas, 1941.
Nelson, Randall H., Professor, *Emeritus*, Ph.D., University of Michigan, 1956.
Paine, Joann P., Associate Professor, Ph.D., University of Oregon, 1967.
Seroka, James H., Associate Professor, Ph.D., Michigan State University, 1976.
Snavely, Keith, Assistant Professor, Ph.D., University of California at Davis, 1984.
Somit, Albert, Professor, Ph.D., University of Chicago, 1947.
Stauber, Leland G., Associate Professor, Ph.D., Harvard University, 1964.
Turley, William S., Associate Professor, Ph.D., University of Washington, 1972.

Psychology (College of Liberal Arts)

Bekker, L. DeMoyne, Associate Professor, Ph.D., Ohio State University, 1968.
Brutten, Gene J., Professor, Ph.D., University of Illinois, 1957.
Buck, Terence D., Associate Professor, Ph.D., University of Missouri, 1968.
Carrell, Patricia L., Professor, Ph.D., University of Texas at Austin, 1966.
Carrier, Neil A., Professor, Ph.D., University of Michigan, 1956.
Cunningham, Jean, Assistant Professor, Ph.D., University of Utah, 1981.
Dillon-Summer, Ronna, Associate Professor, Ph.D., University of California, Riverside, 1978.
Dollinger, Stephen J., Associate Professor, Ph.D., University of Missouri-Columbia, 1977.
Dunagan, Shirley S., Instructor, M.S., University of Tennessee, 1954.
Ehrenfreund, David, Professor, *Emeritus*, Ph.D., State University of Iowa, 1947.
Gannon, Linda, Associate Professor, Ph.D., University of Wisconsin, 1975.
Geiger, Steve M., Adjunct Assistant Professor, Ph.D., University of Iowa, 1982.
Graham, Jack W., Professor, Ph.D., Purdue University, 1951.
Hamilton, Mary Kathryn, Adjunct Assistant Professor, Ph.D., University of Missouri, Columbia, 1975.
Hansen, Barbara C., Professor, Ph.D., University of Washington, Seattle, 1971.
Haynes, Stephen N., Professor, Ph.D., University of Colorado, 1971.
Heesacker, Martin, Assistant Professor, Ph.D., University of Missouri at Columbia, 1983.
Hotelling, Kathy, Adjunct Assistant Professor, Ph.D., University of Missouri-Columbia, 1982.
Hunter, Richard H., Adjunct Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1982.
Jensen, Robert A., Associate Professor, Ph.D., Northern Illinois University, 1976.

Kelley, Noble H., Professor, *Emeritus*, Ph.D., State University of Iowa, 1936.
Lit, Alfred, Professor, *Emeritus*, Ph.D., Columbia University, 1948.
McCarthy, Patricia R., Assistant Professor, Ph.D., Ohio State University, 1978.
McHose, James H., Professor and *Chairperson*, Ph.D., University of Iowa, 1961.
McKillip, John A., Associate Professor, Ph.D., Loyola University of Chicago, 1974.
Meade, Charles J., Adjunct Assistant Professor, Ph.D., University of Maryland, 1977.
Meltzer, Donald, Professor, Ph.D., University of Pittsburgh, 1963.
Mitchell, Thomas O., Associate Professor, Ph.D., University of Colorado, 1969.
Molfese, Dennis L., Professor, Ph.D., Pennsylvania State University, 1972.
Molfese, Victoria J., Associate Professor, Ph.D., Pennsylvania State University, 1974.
O'Donnell, James P., Associate Professor, Ph.D., University of Pittsburgh, 1965.
Pitz, Gordon F., Professor, Ph.D., Carnegie-Mellon University, 1963.
Purcell, Thomas D., Associate Professor, Ph.D., Southern Illinois University, 1965.
Radtke, Robert C., Associate Professor, Ph.D., State University of Iowa, 1963.
Rafferty, Janet E., Professor, Ph.D., Ohio State University, 1952.
Ramanaiah, Nerella, Associate Professor, Ph.D., University of Oregon, 1971.
Ringuette, Eugene L., Associate Professor, Ph.D., Purdue University, 1963.
Schill, Thomas R., Professor, Ph.D., Oklahoma State University, 1963.
Schmeck, Ronald R., Professor, Ph.D., Ohio University, 1969.
Shoemaker, Donald J., Professor, Ph.D., Ohio State University, 1955.
Slaney, Robert B., Associate Professor, Ph.D., Ohio State University, 1973.
Smith, Douglas C., Associate Professor, Ph.D., Kansas State University, 1977.
Snyder, John F., Associate Professor, Ph.D., Loyola University, 1965.
Tinsley, Diane J., Adjunct Assistant Professor, Ph.D., University of Minnesota, 1972.
Tinsley, Howard E. A., Professor, Ph.D., University of Minnesota, 1971.
Vaux, Alan C., Assistant Professor, Ph.D., Trinity College, Ireland, 1978; Ph.D., University of California at Irvine, 1980.
Westberg, William C., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1948.
Wendt, Rachel, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University, 1966.
Yanico, Barbara, Assistant Professor, Ph.D., Ohio State University, 1977.
York, Dollean C., Adjunct Assistant Professor, Ph.D., Southern Illinois University at Carbondale, 1982.

Radio-Television (College of Communications and Fine Arts)

Brown, William Edward, Assistant Professor, M.S., Southern Illinois University, 1974.
Dybvig, Homer E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University, 1970.
Enos, Patricia, Academic Advisor, Ph.D., University of Iowa, 1981.
Garry, Kenneth, Assistant Professor, Ph.D., Southern Illinois University, 1982.
Hildreth, Richard, Associate Professor, M.S., Syracuse University, 1968.
Johnson, M. William, Assistant Professor, Ph.D., University of Wisconsin, 1982.
Oglesbee, Frank W., Assistant Professor, Ph.D., University of Missouri, 1969.
Shipley, Charles W., Professor, *Emeritus*, Ph.D., Florida State University, 1971.
Sitaram, K. S., Professor, Ph.D., University of Oregon, 1969.
Swan, N. Sam, Associate Professor and *Chairperson*, Ph.D., University of Missouri, 1978.
Vincent, Richard C., Assistant Professor, Ph.D., University of Massachusetts, 1983.
Walker, Myers, Instructor, M.F.A., Southern Illinois University, 1971.
Welker, Randy, Assistant Professor, J.D., Southern Illinois University at Carbondale, 1981.

Recreation (College of Education)

Abernathy, William, Assistant Professor, M.S.Ed., Southern Illinois University, 1963.
Allen, John R., Associate Professor and *Chairperson*, Ph.D., Southern Illinois University, 1977.
Cleary, Leonard E., Assistant Professor, Ph.D., University of Illinois, 1978.
Freeberg, William, Professor, *Emeritus*, D.Rec., Indiana University, 1950.
Glover, Regina, Assistant Professor, Ph.D., University of Maryland, 1983.
McEwen, Douglas, Associate Professor, Ph.D., Michigan State University, 1973.
O'Brien, William, Professor, *Emeritus*, D.Rec., Indiana University, 1967.
Teaff, Joseph, Associate Professor, Ed.D., Columbia University, 1973.
Wood, Thomas, Instructor, Ph.D., Southern Illinois University, 1983.

Rehabilitation Institute (College of Human Resources)

Allen, Harry A., Associate Professor, Ed.D., University of Arkansas, 1971.
Bender, Eleanor, Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1962.
Bryson, Seymour L., Professor, Ph.D., Southern Illinois University, 1972.
Crimando, William, Associate Professor, Ph.D., Michigan State University, 1980.
Cuvo, Anthony J., Professor, Ph.D., University of Connecticut, 1973.
Dickey, Thomas W., Assistant Professor, *Emeritus*, M.A., Southern Illinois University, 1964.
Falvo, Donna R., Associate Professor, Ph.D., Southern Illinois University at Carbondale, 1978.
Gardner, Margaret S., Associate Professor, Ph.D., Northwestern University, 1960.
Goldman, Samuel, Professor, Ph.D., University of Chicago, 1961.
Greene, Brandon F., Associate Professor, Ph.D., Florida State University, 1979.
Grenfell, John E., Professor, Ed.D., Oregon State University, 1966.
Hafer, Marilyn, Associate Professor, Ph.D., Texas Tech University, 1971.
Hawley, Irene B., Assistant Professor, Ph.D., Southern Illinois University, 1973.
Lee, Robert E., Associate Professor, *Emeritus*, Ph.D., University of Minnesota, 1964.
Lutzker, John R., Professor, Ph.D., University of Kansas, 1973.
Miranti, Joseph P., Professor, *Emeritus*, M.D., Loyola Universty of Chicago, 1950.
Peterson, James S., Associate Professor, Ph.D., Southern Illinois University, 1976.
Phillips, J. Stuart, Assistant Professor, Ph.D., Florida State University, 1980.
Poppen, Roger L., Associate Professor, Ph.D., Stanford University, 1968.
Renzaglia, Guy A., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952.
Riggar, Theodore F., Professor, Ed.D., University of Northern Colorado, 1977.
Rubin, Harris B., Professor, Ph.D., University of Chicago, 1965.
Rubin, Stanford E., Professor, Ed.D., University of Illinois, 1968.
Schumacher, Brockman, Professor, Ph.D., Washington University, 1969.
Vieceli, Louis, Associate Professor, M.S.Ed., Southern Illinois University, 1959.
Wright, W. Russell, Associate Professor, Ph.D., Southern Illinois Univeristy, 1974.

Religious Studies (College of Liberal Arts)

Bengtson, Dale R., Assistant Professor, Ph.D., Hartford Seminary Foundation, 1971.
Hayward, John F., Professor, *Emeritus*, Ph.D., University of Chicago, 1949.
Morey-Gaines, Ann-Janine, Assistant Professor, Ph.D., University of Southern California, 1979.

Social Work (College of Human Resources)

Auerbach, Arnold J., Professor, *Emeritus*, Ph.D., University of Pittsburgh, 1961.
Bhattacharyya, Jnanabrota, Associate Professor, Ph.D., University of Delhi, India, 1969.
Brelje, Martha Brose, Assistant Professor, M.S.W., Indiana University, 1963.
Brown, Foster S., Jr., Assistant Professor, Ph.D., Southern Illinois University, 1978.
Cox, Arthur, J., Associate Professor and *Director*, D.S.W., Columbia University, 1977.
Davidson, Mary E., Associate Professor, Ph.D., Brandeis University, 1975.
Denise, Paul S., Assistant Professor, Ph.D., University of California at Berkeley, 1974.
Edmondson, Locksley, Professor, Ph.D., Queen's University, Ontario, Canada, 1973.
Ehrlich, Ira F., Professor, D.S.W., Washington University, 1970.
Fauri, David P., Professor, Ph.D., Syracuse University, 1972.
Gross, Carol, Assistant Professor, Ph.D., Indiana State University, 1980.
Gunter, Patricia, Assistant Professor, Ph.D., Southern Illinois University, 1980.
Kim, Paul K.H., Professor, D.S.W., Tulane University, 1973.
McDermott, Carol, Instructor, M.S.S.S., Boston University, 1951.
Mootry, Maria, Assistant Professor, Ph.D., Northwestern University, 1974.
Rosen, Anita L., Assistant Professor, Ph.D., Southern Illinois University, 1975.
Thomas, Richard M., Professor, D.Ed., University of California at Los Angeles, 1964.
Tripp, Luke, Assistant Professor, Ph.D., University of Michigan, 1980.
Warshawsky, Robert, Assistant Professor, D.S.W., Tulane University, 1978.

Sociology (College of Liberal Arts)

Alix, Ernest K., Associate Professor, Ph.D., Southern Illinois University, 1966.
Brooks, Melvin, Associate Professor, *Emeritus*, Ph.D., University of Wisconsin, 1941.
Burger, Thomas, Associate Professor, Ph.D., Duke University, 1972.
Eynon, Thomas G., Professor, Ph.D., Ohio State University, 1959.
Glasberg, Davita S., Assistant Professor, Ph.D., State University of New York at Stony Brook, 1983.
Grant, Linda M., Assistant Professor, Ph.D., University of Michigan, 1981.
Hawkes, Roland K., Associate Professor, Ph.D., Johns Hopkins University, 1967.
Hendrix, Lewellyn, Associate Professor, Ph.D., Princeton University, 1974.
Johnson, Elmer H., Professor, Ph.D., University of Wisconsin, 1950.
Lantz, Herman R., Professor, Ph.D., Ohio State University, 1950.
Meddin, Jay R., Associate Professor, Ph.D., University of Kentucky, 1973.
Nall, Frank C., II, Associate Professor, Ph.D., Michigan State University, 1959.
Patterson, Edgar I., Instructor, M.A., University of Kansas, 1961.
Shalin, Dmitri N., Assistant Professor, Ph.D., U.S.S.R. Academy of Science, 1973.
Shelby, Lon R., Professor, Ph.D., University of North Carolina, 1962.
Snyder, Charles R., Professor and *Chairperson*, Ph.D., Yale University, 1954.
Ward, Kathryn B., Assistant Professor, Ph.D., University of Iowa, 1982.

Special Education (College of Education)

Bates, Paul, Associate Professor, Ph.D., University of Wisconsin, 1978.
Casey, John P., Professor, Ed.D., Indiana University, 1963.
Cordoni, Barbara, Assistant Professor, Ed.D., Duke University, 1976.
Crowner, James, Professor, Ph.D., Michigan State University, 1960.
Ewing, Norma J., Associate Professor and *Chairperson*, Ph.D., Southern Illinois University, 1974.
Hisama, Toshiaki, Associate Professor, Ph.D., University of Oregon, 1971.
Juul, Kristen D., Professor, Ed.D., Wayne State University, 1953.
Marshall, Kathleen, Visiting Assistant Professor, Ph.D., University of Virginia, 1983.
Miller, Sidney R., Associate Professor, Ph.D., Pennsylvania State University, 1974.
Morgan, Howard, Professor, Ed.D., Wayne State University, 1962.
Osborne, Susan, Visiting Assistant Professor, Ph.D., University of Virginia, 1980.
Teska, James, Associate Professor, Ph.D., University of Illinois, 1969.

Speech Communication (College of Communications and Fine Arts)

Breniman, Lester R., Associate Professor, *Emeritus*, Ph.D., Ohio State University, 1953.
Bytwerk, Randall L., Associate Professor, Ph.D., Northwestern University, 1975.
Crow, Bryan, Assistant Professor, Ph.D., University of Iowa, 1982.
Goodiel, Eunice B., Assistant Professor, *Emerita*, M.A., Northwestern University, 1941.
Higgerson, Mary Lou, Associate Professor, Ph.D., University of Kansas, 1974.
Kleinau, Marion L., Professor, Ph.D., University of Wisconsin, 1961.
Kleinau, Marvin D., Associate Professor, Ph.D., Southern Illinois University, 1977.
Lanigan, Richard L., Professor, Ph.D., Southern Illinois University, 1969.
MacDonald, Donald, Associate Professor, Ph.D., Michigan State University, 1971.
Micken, Ralph A., Professor, *Emeritus*, Ph.D., Northwestern University, 1948.
Pace, Thomas J., Professor, Ph.D., University of Denver, 1957.
Parkinson, Michael G., Associate Professor, Ph.D., University of Oklahoma, 1978.
Pelias, Ronald J., Assistant Professor, Ph.D., University of Illinois, 1979.
Potter, David J., Professor, *Emeritus*, Ph.D., Columbia University, 1943.
Sanders, Keith R., Professor, Ph.D., University of Pittsburgh, 1968.
Smith, William D., Associate Professor, Ph.D., Southern Illinois University, 1964.
Talley, C. Horton, Professor, *Emeritus*, Ph.D., State University of Iowa, 1936.
Teigen, Ward C., Assistant Professor, Ph.D., University of Texas, 1983.
VanOosting, James, Assistant Professor, Ph.D., Northwestern University, 1980.
Wiley, Raymond D., Assistant Professor, *Emeritus*, M.S., Southern Illinois University, 1965.

Technology (College of Engineering and Technology)

Andrews, Paul E., Associate Professor, Ph.D., Southern Illinois University, 1980.
Barbay, Joseph E., Jr., Associate Professor, Ph.D., University of Missouri, Columbia, 1971.
Besterfield, Dale H., Professor and *Chairperson*, Ph.D., Southern Illinois University, 1971.
Chen, Han Lin, Assistant Professor, M.S., Southern Illinois University, 1958.
Contor, Keith L., Assistant Professor, M.S., State College of Washington at Pullman, 1960.
Cross, Bud D., Visiting Assistant Professor, M.S., Southern Illinois University, 1965.
Cutrell, Charles R., Visiting Assistant Professor, M.B.A., University of Missouri, 1972.
Dunning, E. Leon, Professor, *Emeritus*, Ph.D., University of Houston, 1967.
Eichfeld, William F., Assistant Professor, M.S., University of Wisconsin, 1973.
Ferketich, Robert R., Assistant Professor, Ph.D., Southern Illinois University, 1980.
Fillman, Harry W., Visiting Associate Professor, M.S., Columbia University, 1964.
Frank, Roy R., Jr., Assistant Professor, B.A., Southern Illinois University, 1970.
Gardner, Autrey T., Visiting Assistant Professor, M.A., University of Colorado 1983.
Hart, Willard C., Instructor, *Emeritus*, B.S., University of Illinois, 1939.
Hayduk, Charles M., Assistant Professor, M.S., Southern Illinois University, 1984.
Horwitz, Norman G., Visiting Assistant Professor, M.S. Polytechnic Institute of Brooklyn, 1972.
Jakubowski, Tadeus L., Visiting Assistant Professor, M.A., University of Maryland, 1968.
Johnson, Marvin E., Professor, Ed.D., University of Missouri, Columbia, 1959.
Jones, Robert L., Visiting Assistant Professor, M.S., University of Arkansas, 1978.
King, Frank H., Visiting Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University, 1981.
Klopp, Mark E., Associate Professor, M.S.Ed., Pennsylvania State University, 1954.
Lindsey, Jefferson F., III., Professor, D. Engr., Lamar University, 1976.
McLuckie, John D., Visiting Associate Professor, Ph.D., Southern Illinois University, 1976.
Medeiros, Raymond R., Visiting Assistant Professor, M.S., Texas Tech College, 1964.
Meyers, Fred E., Associate Professor, M.B.A., Capitol University, 1975.
Moeller, C. Merrill, Associate Professor, *Emeritus*, M.S.C.E., Kansas State University, 1951.
Mueller, William E., Visiting Assistant Professor, M.B.A., Eastern Michigan University, 1972.
Nolen, Emil Ray, Visiting Instructor, B.S., Murray State University, 1973.
Nolen, Don H., Visiting Assistant Professor, M.S., Texas Christian University, 1954.
O'Hagan, Robert E., Visiting Assistant Professor, M.S., Wisconsin State University, 1974.
Orr, James P., Visiting Assistant Professor, Ph.D., Southern Illinois University, 1983.
Ott, Carlyle G., Assistant Professor, *Emeritus*, M.S.Ed., Southern Illinois University, 1951.
Pagano, Mark A., Assistant Professor, M.S., Southern Illinois University, 1983.
Rogers, C. Lee., Associate Professor, Ph.D., Southern Illinois University, 1975.
Slaney, John H., Visiting Assistant Professor, M.S., George Washington University, 1967.
Stuessy, Eugene L., Ed.D., Texas A & M University, 1969.
Tucker, David L., Visiting Assistant Professor, M.S., Bradley University, 1984.
Zeigler, Timothy W., Assistant Professor, M.S., University of Illinois, 1969.

Theater (College of Communications and Fine Arts)

Lyons, Judith F., Assistant Professor, M.A., Ed.S., University of Iowa, 1972.
MacLean, Calvin, Visiting Assistant Professor, M.F.A., University of Massachusetts, 1981.
McLeod, Archibald, Professor, *Emeritus*, Ph.D., Cornell University, 1943.
Moe, Christian H., Professor, Ph.D., Cornell University, 1958.
Palec, Milan, Assistant Professor, M.F.A., Prague, Czechoslovakia, 1973.
Pinney, George, Visiting Lecturer, M.F.A., Southern Illinois University at Carbondale, 1980.
Reynolds, Howard, Assistant Professor, M.F.A., Smith College, 1969.
Shank, Richard, Visiting Professor, M.F.A., Yale University, 1955.

Stevens, David, Associate Professor and *Chairperson,* Ph.D., Bowling Green University, 1973.
Stewart-Harrison, Eelin, Professor, Ph.D., Louisiana State University, 1968.
Straumanis, Alfreds, Professor, Ph.D., Carnegie Institute of Technology, 1966.

Vocational Education Studies (College of Education)

Anderson-Yates, Marcia, Assistant Professor and *Chairperson,* Ph.D., Southern Illinois University, 1975.
Aydt, Roger D., Visiting Instructor, M.S., Southern Illinois University, 1982.
Bailey, Larry J., Professor, Ed.D., University of Illinois, 1968.
Bittle, R. E., Professor, Ed.D., University of Florida, 1956.
Bobell, John L., Assistant Professor, Ed.D., University of Missouri, 1973.
Bortz, Richard F., Professor, Ph.D., University of Minnesota, 1967.
Boss, Richard D., Visiting Associate Professor, Ed.D., Oregon State University, 1968.
Brames, Thomas J., Visiting Assistant Professor, Ed.D., Utah State University, 1975.
Bubnas, Phyllis, Assistant Professor, M.S., Southern Illinois University, 1960.
Buila, Theodore, Associate Professor, Ph.D., Cornell University, 1968.
Burger, Opal June, Assistant Professor, *Emerita,* Southern Illinois University, 1978.
Carter, Rose Mary, Assistant Professor, Ph.D., Purdue University, 1970.
Cilley, Richard N., Visiting Assistant Professor, Ed.D., Virginia Polytechnic Institute and State University, 1977.
Cunningham, William J., Visiting Assistant Professor, Ed.D., University of Tennessee, 1976.
DeWulf, Bernard G., Visiting Assistant Professor, Ph.D., Washington University (St. Louis), 1962.
Dickerson-Clavin, Deborah, Visiting Assistant Professor, Ed.D., Virginia Polytechnic Institute and State University, 1981.
Erickson, John H., Professor, *Emeritus,* Ed.D., Pennsylvania State University, 1953.
Fults, Anna Carol, Professor, Ph.D., Ohio State University, 1946.
Gooch, Bill G., Associate Professor, Ed.D., University of Tennessee, 1973.
Harbert, Donald L., Visiting Assistant Professor, Ed.D., University of Florida, 1968.
Harwick, Charles A., Visiting Assistant Professor, Ph.D., Southern Illinois University, 1983.
Heisler, Arlene J., Assistant Professor, *Emerita,* M.S., Southern Illinois University, 1959.
Huck, John F., Associate Professor, Ed.D., University of Illinois, 1973.
Hulle, William, Visiting Assistant Professor, Ed.D., Wayne State University, 1972.
Jenkins, James, Professor, Ed.D., Pennsylvania State University, 1955.
Keenan, Dorothy, Professor, Ed.D., University of Illinois, 1962.
Klehm, Merwyn A., Visiting Assistant Professor, Ph.D., Ohio State University, 1974.
Koehler, Charles Russell, Jr., Visiting Assistant Professor, Ph.D., Colorado State University, 1980.
Legacy, James, Associate Professor, Ph.D., Cornell University, 1976.
Little, Richard L., Visiting Associate Professor, Ed.D., Arizona State University, 1968.
Luft, Roger L., Associate Professor, Ed.D., Oregon State University, 1977.
Meyer, Earl C., Visiting Assistant Professor, Ph.D., Georgia State University, 1982.
Mullen, Paul E., Visiting Assistant Professor, Ph.D., University of Missouri, 1976.
Nervig, Nordale N., Visiting Assistant Professor, Ed.D., Utah State University, 1977.
Pamaro-Kish, Kathryn L., Visiting Instructor, M.S., Southern Illinois University, 1981.
Perreault, Heidi, Assistant Professor, Ph.D., Oklahoma State University, 1983.
Rahe, Harves, Professor, *Emeritus,* Ed.D., Indiana University, 1950.
Ramp, Wayne S., Professor, *Emeritus,* Ed.D., Bradley University, 1956.
Reneau, Fred, Associate Professor, Ed.D., Virginia Polytechnic Institute and State University, 1979.
Richerson, Virginia L., Visiting Instructor, M.S., Southern Illinois University, 1980.
Robinson, William O., Visiting Assistant Professor, Ed.D., University of Arkansas, 1971.
Rodgers, William L., Visiting Instructor, M.S., Southern Illinois University, 1982.
Rosenbarger, Maxine, Associate Professor, Ph.D., Southern Illinois University, 1970.
Shea, Mary Lou, Visiting Assistant Professor, Ph.D., Southern Illinois University, 1980.
Shields, Bill J., Instructor, M.S.Ed., Southern Illinois University, 1963.
Stadt, Ronald W., Professor, Ed.D., University of Illinois, 1962.
Steinbach, Gary M., Visiting Assistant Professor, Ph.D., University of Minnesota, 1979.
Stitt, Beverly A., Lecturer, Ph.D., Southern Illinois University, 1980.
Stitt, Thomas R., Professor, Ph.D., Ohio State University, 1967.
Sullivan, James A., Professor, Ed.D., West Virginia University, 1967.

Sutton, W. Clyde, Lecturer, M.S., Murray State University, 1973.
Thompson, Delman L., Visiting Assistant Professor, Ph.D., Texas A & M University, 1976.
Wood, Eugene S., Professor, *Emeritus,* Ed.D., University of Missouri, 1958.
Yates, Loyd, Visiting Assistant Professor, Ph.D., Southern Illinois University, 1981.

Zoology (College of Science)

Anthoney, Terence R., Associate Professor, M.D., Ph.D., University of Chicago, 1968, 1975.
Beatty, Joseph A., Associate Professor, Ph.D., Harvard University, 1969.
Blackwelder, Richard E., Professor, *Emeritus,* Ph.D., Stanford University, 1934.
Brandon, Ronald A., Professor and *Chairperson,* Ph.D., University of Illinois, 1962.
Burr, Brooks M., Associate Professor, Ph.D., University of Illinois, 1977.
Dyer, William G., Professor, Ph.D., Colorado State University, 1965.
Ellinger, Mark S., Associate Professor, Ph.D., University of Minnesota, 1976.
Englert, DuWayne C., Professor, Ph.D., Purdue University, 1964.
Fisher, Harvey I., Professor, *Emeritus,* Ph.D., University of California at Berkeley, 1942.
Galbreath, Edwin C., Professor, *Emeritus,* Ph.D., University of Kansas, 1951.
Garoian, George, Professor, Ph.D., University of Illinois, 1956.
George, William G., Professor, Ph.D., University of Arizona, 1961.
Gersbacher, Willard, Professor, *Emeritus,* Ph.D., University of Illinois, 1932.
Heidinger, Roy C., Professor, Ph.D., Southern Illinois University, 1970.
King, David, Associate Professor, Ph.D., University of California at San Diego, 1975.
Klimstra, Willard D., Distinguished Professor, Ph.D., Iowa State University, 1949.
Kohler, Christopher C., Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1980.
LeFebvre, Eugene A., Associate Professor, Ph.D., University of Minnesota, 1962.
Lewis, William M., Professor, *Emeritus,* Ph.D., Iowa State University, 1949.
Martan, Jan, Professor, *Emeritus,* Ph.D., University of Oregon, 1963.
McPherson, John E., Jr., Professor, Ph.D., Michigan State University, 1968.
Paparo, Anthony A., Professor, Ph.D., Fordham University, 1969.
Petersen, Bruce W., Assistant Professor, Ph.D., University of Colorado, 1968.
Shepherd, Benjamin A., Professor, Ph.D., Kansas State University, 1970.
Stahl, John B., Associate Professor, Ph.D., Indiana University, 1958.
Stains, Howard J., Professor, Ph.D., University of Kansas, 1955.
Stein, Hilda, Associate Professor, *Emerita,* M.S., University of Illinois, 1929.
Stickney, Robert R., Professor, Ph.D., Florida State University, 1971.
Tacha, Thomas C., Assistant Professor, Ph.D., Oklahoma State University, 1981.
Waring, George H., Professor, Ph.D., Colorado State University, 1966.
Woolf, Alan, Professor, Ph.D., Cornell University, 1972.

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